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1942

THE PAN-PACIFIC ENTOMOLOGIST

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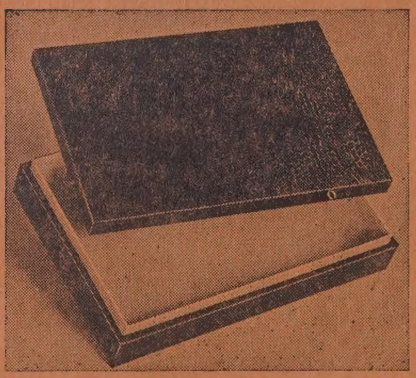

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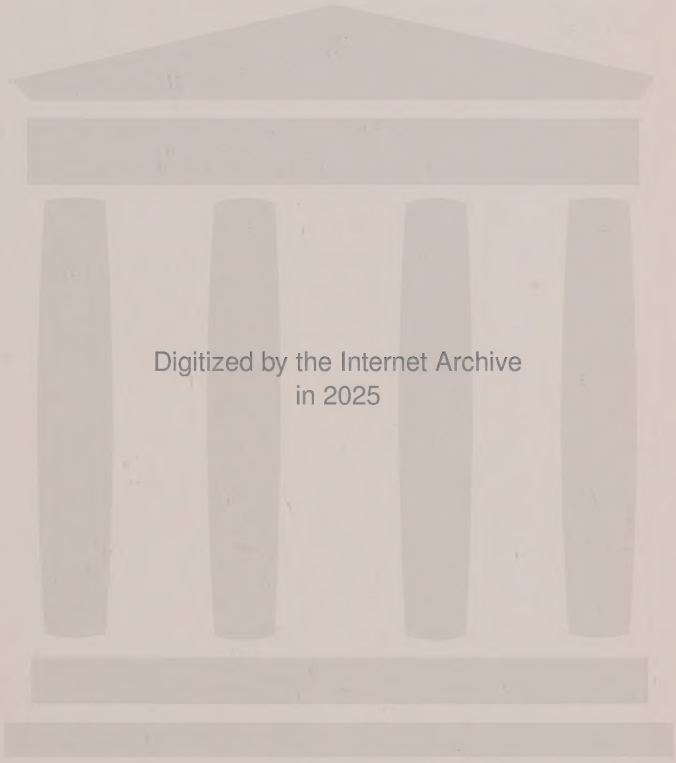

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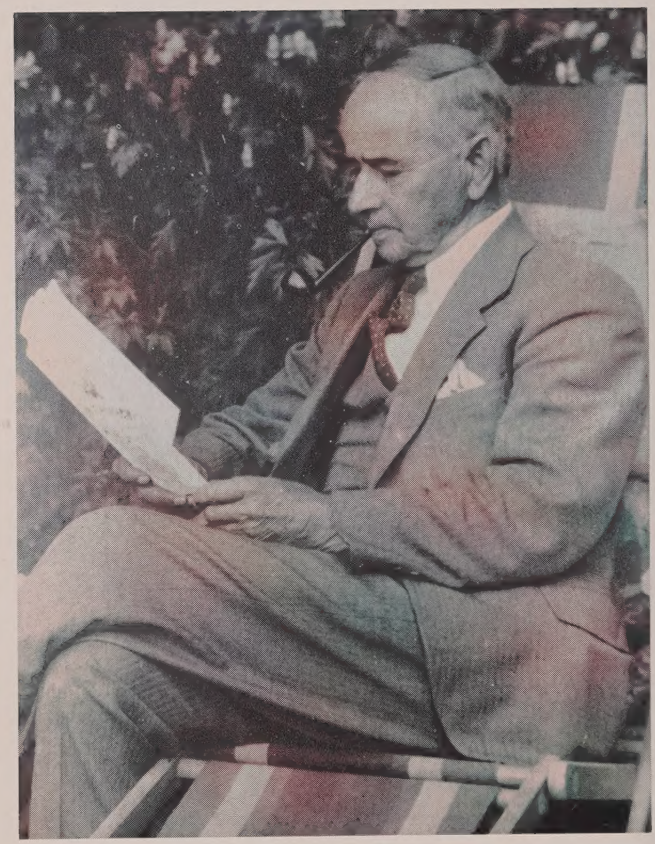

RALPH HOPPING

1868—1941

The Pan-Pacific Entomologist

Vol. XVIII, No. 1 January, 1942

RALPH HOPPING*
1868—1941

Ralph Hopping, the son of George W. Hopping, an expert accountant of New York, and Laura De Grasse Hopping, a direct descendant of Admiral De Grasse, the commander of the French Fleet at Yorktown, was born in New York City, April 8, 1868. In April, 1891, he came to California with his father who joined the Cooperative Kaweah Colony in Tulare County. In 1892, he married Katherine Blanche Redstone and they settled down in the colony until it disintegrated, when he formed a partnership with John Broder. Under the firm name of Broder and Hopping, they conducted a stage line which carried travelers from the railroad in the San Joaquin Valley into the lower part of the Sierras where they were transferred to pack trains and so conducted into the Giant Forest, the King's and the Kern River Canyons. In this way, Hopping met and formed intimate friendships with many eminent people.

About 1905 after the death of John Broder, Ralph Hopping entered the U. S. Forest Service and in 1912, was made Forest Entomologist with headquarters in San Francisco. He had been an amateur entomologist from boyhood and with the practical experience of a frontiersman which he had gained since he came to California, was well fitted for the position. This move compelled the Hoppings to give up their old home in Kaweah and move to Berkeley. From 1912 to 1919, Ralph carried on his studies and control of the injurious forest insects, his work covering California, Oregon, New Mexico, Arizona and Colorado. In 1919, he was offered a position in Canada and in December of that year became Entomologist in Charge of the Vernon Forest Insect Laboratory in British Columbia. His family followed him to Canada where he remained until his death on October 29, 1941, rising to the rank of Senior Agricultural Scientist, and retiring on April 8, 1939.

In September, 1929, his wife died, her death hastened by the shock of learning of the mauling which a son-in-law had received from a grizzly bear in northern British Columbia. On May 12, 1939, Ralph Hopping married Mrs. Eltha Edwards who survives him and lives in Vernon. He is also survived by two daughters, Mrs. Parker Talbot of San Luis Obispo, California, and Mrs.

* Information and list of publications supplied by George W. Hopping.

H. C. Hughes of Nelson, British Columbia, and by a son, George R. Hopping, Entomologist in Charge of the Vernon Forest Insect Laboratory.

Mr. Hopping received his early education in the East before coming to California but as far as his scientific training went, was self taught. From early youth, he collected and studied insects, particularly the Coleoptera, and kept up an extensive correspondence with other entomologists throughout his life. Many of the interesting things which he discovered were at first described by his friends as for instance, Henry C. Fall, but later on he described many species himself. He built up a very large collection of Coleoptera, particularly rich in the insects of the forest. He was most interested in the Cerambycidae and his best known works are on the tribe Lepturini of that family. As a man, he was rather small, but tough and wiry, hardened by his frontier life. In disposition he was sociable and kindly, having a most attractive smile. As a result, he had a host of friends and was well liked by everyone with whom he came in contact. In his passing, the West has lost one of its best-known entomologists and a most worthy man.—FRANK E. BLAISDELL, SR., and EDWIN C. VAN DYKE.

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1899. Some Notes on Coleoptera Found on Species of Ceanothus. Ent. News, 10 (6):162-165.
1915. The Entomological Aspect of Slash Disposal. Proc. Soc. Am. Foresters, 10 (2):183-185.
1920. A New Species of the Genus Pissodes (Coleoptera). Can. Ent. 52 (6):132-134. 1 fig.
1920. Some Winter Insect Life. Can. Ent., 52 (8):217-218.
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1921. Depreciation by Forest Insects. Special Publication—Papers Read at British Columbia Forestry Convention, B. C. Provincial Government, Victoria, B. C., pp. 24-26.
1922. A Review of the Genus Monochamus Serv. (Cerambycidae, (1921) Coleoptera) Can. Ent., 53 (11):252-258. 2 pl.
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1923. Forest Entomology. Proc. Ent. Soc., B. C., 17 and 19:183-187.
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1925. Juniperus Scopulorum as a Host. Can Ent., 57 (5):105-106.
1925. New Coleoptera from Western Canada. Can Ent., 57 (8): 206-208.

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1928. Some Notes on Examination of Types of Coleoptera in the Le Conte and Casey Collections. Can. Ent., 60(1):6-8.
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1934. The Chief Forest Insect Problems of the Pacific Coast of North America. Proceedings Fifth Pacific Science Congress (1933). Vol. V, pp. 3385-3386. Univ. of Toronto Press.
1935. New Coleoptera from Western Canada. V. Can Ent., 67 (1):8-9.
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NOTES ON THE BEMBICID, STICTIELLA PULLA (HANDLIRSCH)

(Hymenoptera)

BY IRA LA RIVERS

Reno, Nevada

During the summer of 1939, the author was able to spend some time in the cricket fields of northern Nevada, and to observe, among other things, some of the interesting behavior of the small yellow-and-black burying bembicid, *Stictiella pulla* (Handlirsch).[1] It was while watching the large black cricket wasp, *Chlorion laeviventris* (Cresson)[1], that the small *S. pulla* was first seen, and thereafter, as is usual in such cases, they were seen quite commonly in the well-lighted, sand-loam, sagebrush clearings. Like the larger wasps, *pulla* was busiest during the early morning hours from 6:00 to 8:00, but many were still to be found digging, stocking, and attending burrows until noon. In general, however, they spent the cooler parts of each day—early morning and late afternoon—at their labors, and rested during the hot mid-day. Their behavior can be more specifically related by considering the three most important nests individually.

NUMBER 1. This wasp was first seen flying energetically about a small clearing in which six large *Chlorion laeviventris* were working. After examining the terrain in a series of confusingly swift dashes, she alighted and gave the loose soil several quick, experimental strokes, then abandoned the spot and made another series of observations. She repeated this four times before finally selecting a spot near the edge. Now, at 9:10 a.m., she proceeded to dig in earnest. Her mandibles worked the soil loose when it refused to be torn away by the swiftly-moving forelegs, and the latter scooped loose dirt backward, sometimes in a flowing arc, beneath the body. If soil detritus had a tendency to pile up, it was given added impetus by the middle and hind legs in turn. At intervals, the wasp turned about and scattered the pile of debris in all directions, sometimes using her mandibles as a sort of bunting scoop, sometimes throwing it backwards beneath her body, meanwhile pivoting swiftly about to scatter it thoroughly. She made rapid progress with the tunnel, for the soil was easily worked, and soon she was spending the greater part of her time in the burrow.

[1]Determined by Miss Grace Sandhouse.

Each time the wasp backed into the open to clean the tunnel, she rose into the air for a short observation flight, which generally consisted of flying directly up from the opening, hanging motionless in the air for half a second, then dropping back to disappear down the hole. However, this was only when everything seemed secure. If disturbed during these forays, she showed immediate concern and flew about in rapid jerks above the clearing until the source of the disturbance had passed. She was surprised several times by a *C. laeviventris* who was just finishing her own burrow only a foot and a half away. Upon such occasions, *pulla* refused to return to her tunnel until the larger wasp was back at her own. Towards *laeviventris*, and the still larger Mormon cricket, *Anabrus simplex* Haldeman, individuals of whom consistently blundered over her tunnel, *pulla* showed no direct animosity, merely keeping her distance until they had gone, but to other interlopers more nearly her own size, she showed her displeasure by darting at them in an effort to drive them off. An unidentified halictid bee, slightly larger than *pulla*, was thus pursued into an adjacent clearing.

At 10:27, one hour and 17 minutes later, the wasp had her burrow apparently finished to her satisfaction. During the next three minutes, she moved about over the ground at the entrance of the tunnel, and repeatedly scattered dirt in all directions. She alternated this with short trips into the nest, each time scratching in a little more dirt until she finally emerged and effectively plugged the entrance. After two high observation flights, she left the nest at 10:30.

At 10:54, *pulla* returned with a fly, which she clutched to her abdominal surface between middle and hind legs while hurriedly opening the tunnel with her forelegs, and disappeared within. She finally emerged at 11:04 and left, after closing the tunnel. At 12:45, she had not returned, and I was forced to conclude my observations of the nest.

NUMBER 2. This wasp had built her burrow before I came upon her, and was busily engaged in tending the wants of the grub which had, I learned later by digging up the nest, grown to considerable proportions. I noticed the wasp as she was preparing to re-open the nest and take in a fly. Emerging in four minutes, she closed the burrow and rose for a brief observation flight before disappearing. Fifteen minutes later, at 10:18 a.m., she returned with another fly, and deposited it in the burrow. I noted that she closed the entrance behind her with loose dirt,

effectively blocking it while she was inside. When she had left the second time, I dug the nest up, and found it to be 27 centimeters long, with a slight "U" turn, and a gradual gradient of descent from entrance to end. Here I discovered the large grub at the far end of the tunnel, among the customary debris of fly wings and dried sclerites. The two flies just added to the burrow proved to be the syrphid, *Helophilus latifrons* O. S.,[2] a common species in the vicinity. Among the older victims was a nearly intact *Sarcophaga tuberosa* Pand. (This sarcophagid is a consistent parasite of the Mormon cricket, but because of the latter's persistent cannibalism, the usefulness of the fly as a natural control is distinctly limited). I subsequently found many individuals of *tuberosa* in *S. pulla* nests, indicating that they were not uncommon.

NUMBER 3. This individual, like No. 1, was first seen preparing to dig her burrow. Her excavating behavior was, in general, much like that of No. 1, but the two instances in which her *modus operandi* differed are worthy of recording. While watching the wasp, I noticed a tiny shadow flitting about the tunnel entrance in characteristic fashion. Locating the owner, I found a very diminutive sarcophagid resting on the earth above the burrow opening. I was already familiar with these little parasites, having watched them at work on the larger *Chlorion laeviventris*. There are two species, *Eumacronychia elita* Townsend and *Euaraba tergata* (Coquillet),[3] which are indistinguishable in the field, and, as indicated by collected specimens, apparently equally common. Invariably, they were first brought to my attention by the motion of their shadow across the ground; they themselves are characteristically greyish and thus nearly perfectly camouflaged.

The fly flew up each time the wasp emerged from the tunnel, but returned when she had gone back in. Apparently, during this time, *pulla* was unaware of the presence of the parasite, for she ignored it entirely. She came out of the burrow again, and busied herself scattering debris. The fly flew off, staying longer than usual, and then returned to a *Gilia congesta* flower six inches from the working wasp. I had begun to wonder if *pulla* was as totally oblivious to these flies as was *C. laeviventris*, and had hoped that her smaller size might, in a manner of speaking, make her eyesight sharper. Nor was I disappointed. As the fly

[2]Determined by C. L. Fluke.
[3]Determined by D. G. Hall.

alighted on the plant, her motion attracted the wasp. *S. pulla* rose into the air above the nest, hovered for an instant, then darted directly at the fly. The latter immediately flew up, then attempted to alight on the flower again, but the wasp swooped at her and drove her off. Beyond this bit of behavior, which I witnessed in other individuals of *pulla*, I have no further knowledge of the relationship between the two.

TABLE I. SUMMARY OF DATA FOR TWENTY-FIVE NESTS OF STICTIELLA PULLA (HANDLIRSCH) IN NEVADA.

Nest No.	Approximate Size of Grub	Approximate No. Victims	No. of S. tuberosa	No. of H. latifrons	Length of Burrow in Cms.
1.	medium	11	2	4	27
2.	medium	12	0	4	27.5
3.	small	4	0	1	26
4.	large	13	3	0	25.5
5.	large	16	0	3	27
6.	large	14	0	6	27
7.	large	14	1	9	28
8.	large	14	0	4	28
9.	large	19	3	7	29.5
10.	small	6	0	1	27.5
11.	small	5	0	2	27
12.	large	11	0	1	28
13.	large	17	2	5	25
14.	large	14	0	2	26.5
15.	small	3	0	0	27
16.	medium	8	0	1	27
17.	medium	9	1	1	26
18.	small	4	2	0	28
19.	medium	11	3	2	29
20.	medium	9	1	1	28.5
21.	medium	9	3	1	28
22.	medium	11	0	4	27
23.	large	16	1	2	27
24.	large	15	2	3	26.5
25.	large	18	1	6	27.5
Averages	small-20%	4.4	0.4	0.8	
	medium-32%	10.0	1.25	2.25	
	large-48%	15.08	1.08	4.0	
Total Average		11.32	1.0	2.8	27.32

In view of the fact that the wasp attends her growing larva daily, and brings it food until pupation, it would be extremely interesting to know just how the sarcophagids take advantage of this. Their procedure must of necessity be quite different from that employed in the parasitization of *laeviventris*, which is a comparatively simple matter involving few obstacles. When successful, they very probably enter the newly-completed burrow just after *pulla* brings in the first victim, upon which she deposits her egg. *Euaraba* and *Eumacronychia* larviposit (ever convenient for a parasite) and the young sarcophagids would be able, as in the case of *laeviventris*, to immediately destroy the host egg

and begin feeding on the supplied food. However, there are two very interesting points in connection with this possible parasitization upon which I have no data, and upon which hinges the entire success of the parasites.

(1) How do they get past the vigilant *Stictiella pulla?* Unlike *laeviventris*, this wasp is careful to close the nest each time she leaves, and there is not room for the fly to slide past her while the owner is in the tunnel. And I doubt that the fly could gain entrance while the wasp was clearing away debris from the opening, and then hide at the end of the tunnel without being detected.

(2) *Euaraba* and *Eumacronychia* always, in my knowledge of their *modus operandi* when parasitizing the larger *laeviventris*, deposited an average of 20 or more larvae upon or near the host egg. To do this with *Stictiella pulla* would be to defeat their own purpose, for it is not likely that this small wasp could feed that many sarcophagid larvae in their middle and last stages of growth. If successful here at all, the parasites must of necessity limit their larvae to one per nest. It would be relatively simple, from the author's knowledge of similar behavior in related wasps, to imagine *pulla* being duped into feeding one sarcophagid larva, but in the many established burrows which were dug up, nothing but wasp larvae was found, showing, very probably, that the vigilance of the wasp is a strong guarantee against this particular form of victimization.

Erynnis lacustra (Wright) from near the Type Locality

(Lepidoptera, Nymphalidae)

On May 24, 1938, the writer took several specimens of this species, and saw others, about 14 miles from Middletown, Lake County, California, on the road to St. Helena. The terrain was mountainous and covered with a mixed forest. The insects were taken at the side of the road, where water was seeping from the road bank.

The type locality is given as Blue Lakes, Lake County, California. While Middletown is quite a few miles from the Blue Lakes, it is in the same general region. It is interesting to note that practically all the specimens of this species that are found in collections, have been taken in southern California. Mr. Lowell Hulbirt of Glendora, California, has taken them in considerable numbers in the Mohave region.

The specimens from Middletown represent the nearest approach to topotypical specimens that I have seen.—J. W. Tilden.

DESCRIPTIONS, RECORDS AND SYSTEMATIC NOTES CONCERNING WESTERN NORTH AMERICAN STONEFLIES

(Plecoptera)

BY T. H. FRISON

Illinois Natural History Survey, Urbana

Since the publication of my last paper on stoneflies (Frison, 1937), much material from western states has been studied. The taxonomic and nomenclatorial results of part of my study are hereby presented.

All holotypes, allotypes and some of the paratypes designated in this article are deposited in the collection of the Illinois Natural History Survey. Paratypes of some of the species are deposited in other collections as noted.

Dr. Carl O. Mohr, Associate Entomologist with the Illinois Natural History Survey, has made the drawings used to illustrate this paper, and I am deeply grateful to him for this service.

In connection with the preparation of this paper, I am indebted to the following individuals and institutions for the loan of material, permission to study typic specimens intimately and other favors of a varied character: Professor Nathan Banks, Museum of Comparative Zoology, Cambridge, Mass.; Mr. E. T. Cresson, Jr., Academy of Natural Sciences of Philadelphia, Philadelphia, Pa.; Dr. Henry Dietrich, Cornell University, Ithaca, N. Y.; Mr. S. G. Jewett, Jr., Portland, Ore.; Professor Trevor Kincaid, University of Washington, Seattle, Wash.; Dr. G. F. Knowlton, Utah State Agricultural College, Logan, Utah; Dr. R. L. Post, Oregon State College, Corvallis, Ore.; and Dr. W. E. Ricker, Indiana University, Bloomington, Ind.

Taeniopteryx pacifica Banks

Taeniopteryx pacifica Banks. 1900. Trans. Am. Ent. Soc. 26:244.
Taeniopteryx raynoria Claassen. 1937. Jour. Kan. Ent. Soc. 10(2):46. April. *New synonymy.*
Taeniopteryx kincaidi Hoppe. 1938. Univ. Wash. Pub. in Biol. 4(2):164. Dec. *New synonymy.*

Recently, it has been my privilege to study the types of *Taeniopteryx raynoria* Clsn. (1937), *T. vanduzeea* Clsn. (1937) and *T. kincaidi* Hoppe (1938). As a result of these studies, and comparisons with other material in the Illinois Natural History

Survey collection, I have come to the conclusion that *T. raynoria* and *T. kincaidi* are synonyms of *T. pacifica* Banks (1900).

T. vanduzeea Clsn., however, is a valid species and differs particularly from all other western species of this genus by having a small lobe on the ninth sternite; in this respect resembling the eastern *T. contorta* N. & C. (1925).

T. raynoria and *T. kincaidi* depart from typical *pacifica* in minor details only. Studies of series of specimens of *Taeniopteryx* of various species show that minor variations in shape and size of certain structures within a species are to be expected.

Hoppe (1938), in the key separating males of *Taeniopteryx* accompanying her original description, separates *pacifica* from *kincaidi* on the basis of the presence or absence of "two raised rearward pointing appendages" on the tenth tergite. These raised, flaplike appendages, although varying considerably in size, are a characteristic of males of *pacifica* and are present in the holotypic and paratypic males of *kincaidi*.

Taeniopteryx nivalis (Fitch)

Nemoura nivalis Fitch. 1847. Am. Jour. Ag. and Sci. 5(13):279. May.

Since this common eastern North American species has not been previously recorded from west of the Mississippi River, the following records of specimens from Oregon are given: Corvallis, Oak Creek (Biol. 113), 2♂, 4♀, 5 exuviae; Jan. 24, 1935, R. Prentiss, 5♂, 3 exuviae; Jan. 30, 1935, R. W. Prentiss, 2♂, 1♀, 1 nymph; Feb. 2, 1934, F. Hinman, 1♀; Jan. 30, 1934, in spider web, 1♀; Jan. 31, 1934, 1♀; April 2, 1935, B. Crowell, 1♀; Jan. 31, 1936, 2♀; Jan. 1, 1936, 5♀; Jan. 31, 1936, H. Eisenschmidt, 2♂; March 15, 1935, J. Schuh, 1♂; Jan. 10, 1935, 3 nymphs; March 6, 1936, S. G. Jewett, Jr., 2♀. Hillsboro, March 19, 1936, Gray & Schuh, 4♀. Portland, Johnson Creek at Errol Station, Feb. 3, 1939, S. G. Jewett, Jr., 5♂, 6♀; Feb. 3, 1939, Johnson Creek at 82nd Street, S. G. Jewett, Jr., ♂♂, ♀♀. Columbia County, Beaver Creek, Feb. 19, 1939, S. G. Jewett, Jr., 1♀. St. Helens, Columbia County, Milton Creek, Feb. 19, 1939, S. G. Jewett, Jr., 2♀. Benton County, Marys River, Feb. 10, 1938, S. G. Jewett, Jr., 2♂: Feb. 10, 1938, Muddy Creek, S. G. Jewett, Jr., ♂♂, ♀♀; Jan. 10, 1938, E. E. Crawford, 1 nymph; Feb. 10, 1938, E. E. Crawford, 1♀.

A careful study of these Oregon specimens, including comparisons with material from other parts of the country, has failed

to reveal any fundamental difference between eastern and western specimens. Some slight difference in the shading of areas in the wings between Illinois and Oregon specimens was observed but nothing to warrant separation into different taxonomic categories.

Nemoura producta Claassen

Nemoura producta Claassen. 1923. Can. Ent. 55:286.
Nemoura producta Ricker. 1939. Proc. Ent. Soc. Brit. Columbia, 35:21. Feb.
Nemoura tuberculata Frison. 1937. Ill. Nat. Hist. Surv. Bul. 21(3):84.

The original description of *Nemoura producta* Claassen, without locality data, contains a curious omission which led me in 1937 to redescribe this species under the name of *N. tuberculata*. That *tuberculata* was a synonym of *producta* became known to Ricker (1939) but through error this synonymy was published as "*N. producta* Claassen (syn. *N. tuberculifera* Frison)." I have never described any species by the name of *tuberculifera* and I know from material and correspondence that *tuberculata* was intended.

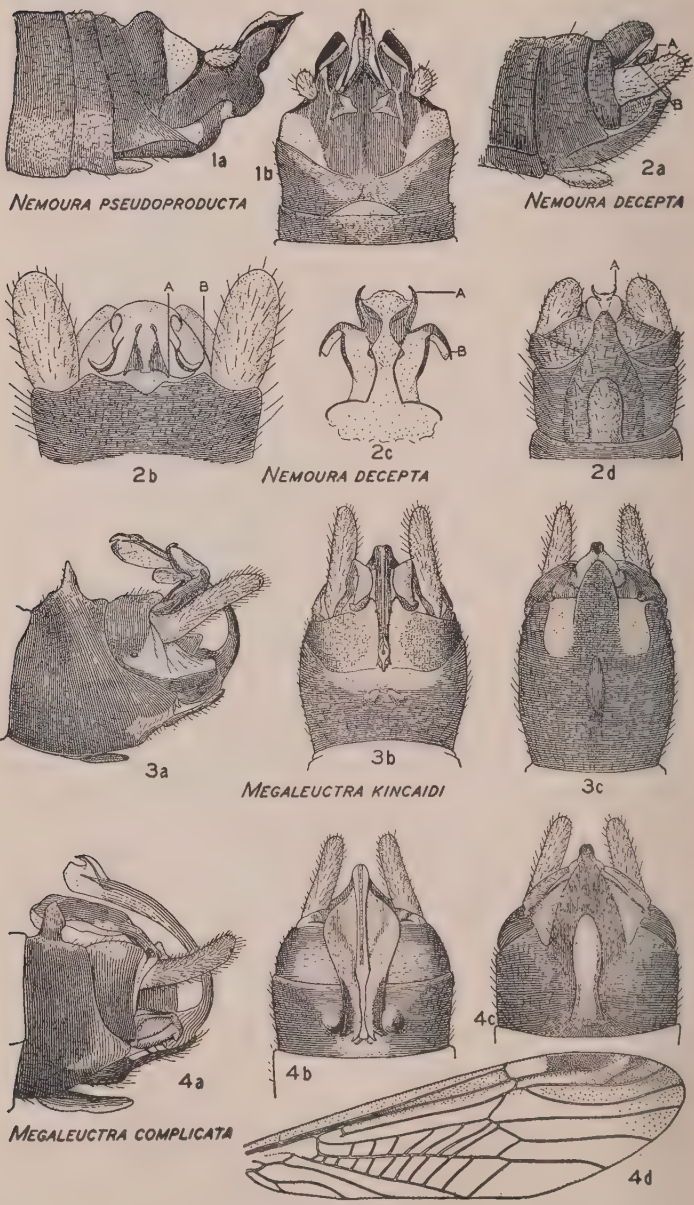
The troublesome omission in the original description of Claassen was a lack of reference to the extraordinary tubercles on the second, third and fourth abdominal tergites of the male (Frison 1937, fig. 71), something unique in North American *Nemoura*. How these structures came to be overlooked by Claassen I do not understand, since they are present in the holotypic male in the collection of Cornell University.

The present notes concerning this species are given here to clarify the literature to date and to give a proper basis for recognition of the new species which follows next.

Nemoura pseudoproducta Frison, new species

Figures 1a-1b

Male. Similar in most morphological features to *Nemoura producta* Clsn. (1923) as redescribed under the name of *N. tuberculata* Frison (1937). It differs from *producta* (=*tuberculata*) in lacking the peculiar tubercles on the second, third and fourth abdominal tergites, in having the subanal lobes, viewed from the side, with their tips spear-point shaped (fig. 1a), and in having slight differences in the supra-anal and subanal lobes, viewed from above,



Figures 1-4. Western North American Stoneflies.

and best visualized by a study of fig. 71 of a previous paper (Frison 1937) and fig. 1b of the present study.

Holotype, male, Corvallis, Oregon, Oak Creek, April 4, 1937, S. G. Jewett, Jr.

Paratypes: same data as for holotype, 1 ♂; Benton County, Woods Creek, March 5, 1938, 1 ♂; Portland, Multnomah County, Feb. 19, 1936, 1 ♂, and March 17, 1936, 3 ♂; Multnomah Falls, Multnomah County, April 8, 1939, 1 ♂. All from Oregon and collected by S. G. Jewett, Jr. Paratypes in collections of Illinois Natural History Survey and S. G. Jewett, Jr.

In addition to the above males, I am certain I have the female specimens of this new species but they are so similar to the female of *producta*, as described by Frison (1937) under the name *tuberculata*, that I consider it unwise at the present time to include this sex in the typic series. Some of these females have the same data associated with them as the males included in the typic series.

Nemoura decepta Frison, new species

Figures 2a-2d

Male. Body and appendages essentially brown with paler intersegmental areas. No gill remnants.

Head much wider than pronotum; lateral ocelli about as far apart as each is distant from compound eye, median ocellus located slightly anterior to a line between front margin of compound eyes.

Pronotum broader than long. Wings uniformly hyaline.

Abdominal tergites without tubercles or special structures. Anal cerci, figs. 2a, 2b and 2c, one-segmented, bulbous and without special structures. Supra-anal process visible from above; with two inward pointing teeth or hooks at tip and two outward pointing hooks on sides, figs. 2b and 2c; ninth sternite much produced behind like a subgenital plate and with a small lobe at base of anterior margin, figs. 2a and 2d.

Length of body, 4.5 mm.; length to tip of wings, 6 mm.

Holotype, male, Estes Park, Rocky Mountain National Park, Mill Creek, Colorado, June 11, 1937.

Paratypes: foot of Longs Peak, Colorado, June 13, 1937, 2 ♂; Upper Peace River District, Red Bug Slough, north British Columbia, elevation 4,000 feet, August 5, 1932, J. de N. Henry, 1 ♂ (collection of Academy of Natural Sciences of Philadelphia).

Associated with the paratypic males from the "Foot of Longs Peak, Colorado," is a female which I consider to be of this species. I have not included it in the typic series or made it the allotype because it is somewhat teneral.

MEGALEUCTRA Neave

Megaleuctra Neave. 1934. Can. Ent. 66:4.

This interesting genus was originally described from two females collected in British Columbia and placed by its describer (1934) in the family Nemouridae. A year later (1935), in commenting on the classification of North American stoneflies in general, I placed this genus in the family Leuctridae and still hold to this assignment.

The question of the number of species in the genus is troublesome because of lack of sufficient material in collections, lack of association of males with proper females and lack of knowledge concerning how the females in the species may be distinguished. At the present time three specific names are standing in literature; *spectabilis* Neave (genotype of *Megaleuctra*) described from the female, and the names of *stigmata* Banks (1900) and *complicata* Claassen (1937) based upon males.

The species *stigmata* was placed in the genus *Nemoura* when described but has been correctly shifted to *Megaleuctra* by Claassen (1937). At this same time, however, Claassen made several statements which require reappraisal. One of these statements is that "A study of the male type of *Nemoura stigmata* Banks shows that it is identical with *Megaleuctra spectabilis* Neave which was described from female specimens" and he so definitely synonymized them. The marked difference in morphological structures between males and females is such that the morphological characters held in common denote no more than generic affinity. Claassen further attempts to support his proposed synonymy by pointing out that Banks' type came from "Winnipeg, B. C." and that Neave's type came from the "Purcell Range, B. C." I have been unable to find a locality in British Columbia named Winnipeg and suspect that it is incorrect to assume both types are from the same general geographical area. Banks, in the original description, gives the type locality of *stigmata* as "Winnipeg, British America" and the type (M.C.Z. No. 11360) has a label "Winnipeg, B. Col." It is probable that the type was collected at or near Winnipeg, Manitoba.

Regardless of whether or not the type of *stigmata* came from British Columbia or Manitoba, the occurrence of both *stigmata* and *spectabilis* in British Columbia would not prove they are identical. Another species of *Megaleuctra*, distinct from *stigmata*, and named *complicata* by Claassen, is known from Oregon, and

an additional new species from the nearby state of Washington is described in this paper. In other words, *spectabilis* may be a valid species with its male unknown or it may be the female of *complicata, stigmata* or the new species described in this paper. Studies of the types of *complicata* (Cornell Univ. Coll.) and *stigmata* (M.C.Z.) reveal they are valid and morphologically distinct species and in turn they are both different from the new species of this genus described in this paper. Until incontestable data are available, four species of *Megaleuctra* (*stigmata, spectabilis, complicata* and the following new one) must be recognized. These four certainly represent three valid species because of the markedly different genital structures presented by the males. Priority of and synonymy of names, if any, depend upon the final status of *spectabilis*. Whether *Megaleuctra* as a generic name must give priority to *Udamocercia* Enderlein (1909) must await a better understanding of the world fauna.

Megaleuctra kincaidi Frison, new species

Figures 3a-3c

Head, thorax, abdomen and appendages light to dark brown.

Head through compound eyes much wider than pronotum; three ocelli forming a nearly equilateral triangle, lateral ocelli over twice as far apart as each is distant from compound eye; maxillary palpi large, about the same diameter as basal antennal segments.

Pronotum about as wide as long, margins light colored, central area darker with indication of a wide, longitudinal, lighter median stripe.

Legs with second tarsal segment much shorter than third, the third much shorter than first, the first about as long as second and third combined.

Ninth tergite, figs. 3a and 3b, with two sharply pointed tubercles on middle area; tenth tergite, figs. 3a and 3b, at posterior margin with a peculiar, highly sclerotized structure arising between and above the anal cerci and then bent forward again about at right angles, this structure with its outer upper corners flared out and with its middle area sunken to form a groove or channel in which lies a long, recurved, subanal process originating between subanal lobes; under this angled structure at its base on dorsal area is a membranous, rearward-directed flap; anal cerci long, single segmented; subanal process long, recurved over dorsal tip of abdomen, resting in the groove of the process arising on the tenth tergite, and originating between subanal lobes, head of this process bulbous, viewed from the side; ninth sternite, fig. 3c, with a short, stout, spurlike appendage in the middle area of its basal

part and a sub-genital-like plate on its posterior margin; subanal lobes strongly sclerotized and forming basal area where subanal process originates.

Wings with membrane essentially hyaline and veins dark brown; pterostigmatic space in both forewings and hindwings with conspicuous marking, the area next to the subcosta hyaline, followed in turn by a dark patch and then by a milky-white patch.

No gill remnants on any body area.

Length to tip of wings, 15 mm.; length to tip of abdomen, 13 mm.

Holotype, male, Mount Rainier, Washington, Fryingpan Creek, Elevation 5,000 feet, July 23, 1937, W. E. Ricker.

Paratypes: between St. Helens and Vernonia, Oregon, April 17, 1937, Gray & Schuh, 1 ♂ ; Seattle, Wash., April 14, 1932, 1 ♂ (specimen recorded as *M. stigmata* Banks? by Hoppe (1936)).

The shape of the peculiar structure at the posterior margin of the tenth tergite, on which the subanal process rests, will readily separate this species from *complicata* Claassen and *stigmata* Banks. In order to further the identification of the species of *Megaleuctra*, I am presenting here illustrations of a specimen of *complicata* compared with the type (figs. 4a, 4b, 4c and 4d). The great difference in length and shape of the structure on the tenth tergite in *kincaidi* and *complicata* can be seen by comparing figs. 3a and 4a. The type of *stigmata* has this same structure long as in *complicata* but more narrowed on its apical portion, the tubercules on the ninth tergite are quite different in shape, and an additional flaplike structure extends from the anterior margin of tergite back between the tubercles, something which is lacking in both *complicata* and *kincaidi*.

The presence or absence of a stub of a vein at the point of origin of the radial sector in the forewing is mentioned by Claassen (1937) as having possible significance in separating the species *stigmata* and *complicata*. This is a variable venational character of no specific value as proved by a female of *Megaleuctra* (species ?), in the Illinois Natural History Survey collection, which has right and left wings variable in this respect. Minor variations of wing venation are common in stoneflies, even in the case of those species belonging to genera with restricted wing venation such as *Megaleuctra*.

(*To be continued in next number*)

THE ENTOMOLOGICAL WORK OF ADALBERT FENYES

BY RICHARD E. BLACKWELDER

U. S. National Museum, Washington, D. C.[1]

The death on February 22, 1937, of Dr. Adalbert Fenyes lessened by one the small number of taxonomists specializing in the large beetle family Staphylinidae. Although Dr. Fenyes did little work on his insects during the last twenty years, his publications are of importance particularly because of his studies on the difficult subfamily Aleocharinae, on which he wrote volume 173 of the *Genera Insectorum*.

During the entomologically active part of his life, Dr. Fenyes assembled a very fine collection of the Aleocharinae and an extensive library. It has been thought worth while to record in detail the disposition of this collection and library as well as to present a complete list of his publications. Notices appeared at the time of Dr. Fenyes' death in this journal,[2] but the data given concerning his library and collection were incomplete and somewhat misleading. The following notes are intended to clear up certain of these points and place on record the details of the present disposition of the collection and library.

Prior to the death of Dr. Fenyes it was understood that he had completed a very large manuscript on North American Aleocharinae but was unable to publish it. At one time he was believed to be willing to sell his collection and library for the amount which would pay for the publication of the manuscript. In December, 1935, a notice appeared in *Entomological News* offering the collection and library for sale. Nothing had come of this advertisement at the time of his death.

Shortly after the death of Dr. Fenyes his collection and library were purchased by the California Academy of Sciences. In addition to the specimens and books the Academy received his notebooks and manuscripts. The notes consisted primarily of about 35,000 5″x9″ sheets bound into 73 loose leaf binders. These notes include the preliminary work on the *Genera Insectorum* volume and other papers, a general bibliography of the Aleocharinae, collecting and accession notes, tabulations of the characters of the Aleocharinae genera, about 400 colored drawings of Aleocharinae, and copied original descriptions of a large

[1]Published with permission of the Secretary of the Smithsonian Institution.
[2]Pan-Pacific Ent., vol. 13, p. 144; Fall, H. C., Pan-Pacific Ent., vol. 13, pp. 145-147.

percentage of the genera and species of Aleocharinae of the world. At the time that these notebooks were received at the California Academy, Mr. Van Duzee thought that they were the large manuscript which Dr. Fenyes was supposed to have ready for publication. It seems almost certain now that they are merely Fenyes' working notes, in part already published, and the manuscript has been lost (or possibly was never actually prepared).

The entire entomological library of Dr. Fenyes was purchased from the Academy jointly by Drs. E. G. Linsley and R. L. Usinger. The large number of Staphylinid separates in the library was then sold to the present writer together with a few books dealing only with the Staphylinidae. A few additional items were sold to the University of California and a few to individual entomologists in California and elsewhere, leaving the balance of the library in the possession of Dr. Linsley and Dr. Usinger.

Dr. Fenyes' own annotated copies of the basic Staphylinid works are principally to be found in the library of the writer. These include Erichson's *Käfer der Mark Brandenburg* and his *Staphylinorum*, des Gozis' Type species, numerous monographs by Wasmann, Fauvel, Bernhauer, etc., Kraatz' *Naturgeschichte der Insecten Deutschlands*, Sharp's *Biologia Centrali-Americana*, and Fenyes' part of the *Genera Insectorum*. The latter work contains very numerous typographical errors, many of which are corrected in Fenyes' own hand.

The Fenyes collection is being adequately cared for at the California Academy of Sciences. Its value lies not so much in its size but in the remarkable completeness in certain respects. It contains, for example, specimens of the genotypes of 85 per cent of the Aleocharine genera and subgenera. Of the remaining genera most are represented by several species, and it is noticeable throughout that very small series are not the rule. There is little type material in the collection, but in the Aleocharinae it is the genotypes which will be of most importance in the near future.

Entomological Publications of Dr. A. Fenyes

1. 1903. *Palaeoxenus* (*Cryptostoma*) *dohrnii* Horn. Ent. News, 14:20. [Notes with a definite California record.]
2. 1906. [Note.] Ent. News. 17:310. [Notes on validity of *Polystoma* and *Coenonica*.]
3. 1907. The Aleocharinae by Casey. Ent. News, 18:60-61. [Corrections to Casey's paper of 1906. Proposes *Leptusa caseyi*, n.n. for *L. tricolor* Csy. (not Scriba) and *Oxypoda dubia*, n.n. for *O. ancilla* Csy. (not Sahlberg.)]

4. 1908. A preliminary arrangement of the Aleocharinae of the United States and Canada. Ent. News, 19:56-65. [Systematic list and bibliography.]

5. 1908. Verbesserungen zu den Aleocharinae des neuen Catalogus Coleopterorum Europae, Caucasi et Armeniae Rossicae. Deutsche. Ent. Ztschr., 1908, p. 60. [Notes and corrections concerning Aleocharinae.]

6. 1909. Two new species of Aleocharinae from California. Proc. Ent. Soc. Wash., 11:197-199. [Descriptions of *Gnathusa eva*, n.gen. and n.sp., and *Bolitochara unicolor*, n.sp.]

7. 1909. A new Staphylinid genus from California. Canad. Ent., 41:325-326. [Descriptions of *Symbiochara lativentris*, n.gen. and n.sp.]

8. 1909. New Aleocharinae of the United States. Ent. News, 20:418-425. [Descriptions of *Silusa densa*, *S. opaca*, *Atheta* (*Halobrecta*) *algophila*, *A.* (*Atheta*) *hilaris*, *A.* (*Dimetrota*) *laetula*, *A.* (*D.*) *neomexicana*, *A.* (*D.*) *nigrita*, *A.* (*Metaxya*) *subpolaris*, and *Ocalea* (*Ocalea*) *fusca*, n.spp.]

9. 1910. [Outline and keys to tribes and genera of Aleocharinae] *in* Blatchley, W. S., Coleoptera of Indiana.

10. 1910. A new Staphylinid genus from Arizona. Ent. News, 21: 117-119. [Descriptions of *Beyeria vespa*, n.gen. and sp.]

11. 1912. *Falagria* Mannh. and its relatives. Jour. New York Ent. Soc., 20:20-27. [Notes, synonymy, and distribution of North American Falagriae, with designation of genotypes and catalog of species.]

12. 1912. Remarks on *Gnypeta* Thoms. Canad. Ent., 44:105-112. [Catalog, synonymy, notes, and key to North American species; notes on Central and South American, and European and Oriental species.]

13. 1912. *Gyronycha* Csy., a critical study. Ent. News, 23:123-125. [Discussion of relationships of genera allied to *Gyronycha*.]

14. 1912. Aleocharinae from the Aleutian Islands. Proc. Pacific Coast Ent. Soc., 1912, 4 pp. [Notes and systematic arrangement.]

15. 1914. H. Sauter's Formosa-Ausbeute. Aleocharinae. Archiv f. Naturg., vol. 80, Abt. A, Heft 2, pp. 45-55. [Descriptions of *Myllaena insularis*, *Homalota opaca*, *Tachyusida luteipennis*, *Schistogenia bicolor*, *S. dubia*, *Gnypeta inducta*, *Atheta* (*Acrotona*) *vexans*, *Astilbus ocularis*, *Zyras* (*Rhynchodonia*) *abbreviatus*, *Aleochara* (*Aleochara*) *insularis*, *A.* (*Euryodma*) *antennalis*, *A.* (*Isochara*) *cribrata*, n.spp., with notes on other species.]

16. 1918. Genera Insectorum, fasc. 173A, pp. 1-110. [Historical review, partial key to genera, list of genotypes, bibliography, systematic arrangement with catalogs of species. No new names.]

17. 1920. Genera Insectorum, fasc. 173B, pp. 111-414. [Systematic arrangement with catalogs of species (cont.). New names: *Tachyusa solskyi* for *T. cavicollis* Solsky (1871); *Atheta sericina* for *A. sericata* Muls. & Rey (1875); *Atheta nova* for *A. impressicollis* Bnhr. (1907); *A. catharinae* for *A. parallela* Bnhr. (1908); *A. poppiusi* for *A. praticola* Popp. (1908-09); *A. vega* for *A. atricornis* Sahlb. (1885); *A. stercoris* for *A. columbica* Bnhr. (1907); *A. maeklini* for *A. moesta* Mäkl. (1852); *A. fauveli* for *A. acuticollis* Fvl. (1907); *A. duplicata* for *A. unigranosa* Bnhr. (1909); *A. pugnans* for *A. militaris* Csy. (1911); *Zyras contristatus* for *Z. constritatus* Per. (1904) (emendation). New genus: *Lypoglossa.* New subgenera: *Disoporina* and *Hypatheta* (of *Atheta*).]

18. 1921. Genera Insectorum, fasc. 173C, pp. 415-453, pls. 1-7. [Systematic arrangement with catalog of species (concluded), index, plates. No new names.]

19. 1921. New Genera and species of Aleocharinae with a polytomic synopsis of the tribes. Bull. Mus. Comp. Zool., vol. 65, No. 2, pp. 17-36. [Descriptions of *Diglotta pacifica,* n.sp., *Thaxteria insularis,* n.gen. and sp., *Cyphea wallisi,* n.sp., *Strophogastra penicillatus,* n.g. and sp., *Mesaraeus laevigatus,* n.gen. and sp., *Hydrosmectina macra,* n.sp., *Lipodonta veris,* n.gen. and sp., *Periergopus sculptus,* n.gen. and sp., *Gnathusa tenuicornis,* n.sp., *Anocalea thaxteri,* n.gen. and sp., *Hygropora americana,* n.sp., *Polylobus thaxteri,* n.sp., *Microglotta barberi,* n.sp., *Pseudoplandria laeta,* n.gen and sp., *and Aleochara* (*Isochara*) *perturbans,* n.sp.; key to 27 tribes of Aleocharinae (one of which is new.]

New Names of Coleoptera Proposed by Dr. A. Fenyes

[Acrotona vexans; see Atheta]
Aleochara **antennalis**, 15:54 (subg. Euryodma) ..... Formosa
cribrata, 15:55 (subg. Isochara) ..... Formosa
insularis, 15:53 (subg. Aleochara) ..... Formosa
perturbans, 19:32 (subg. Isochara) ..... Manitoba
Anocalea, 19:27 (genotype, A. thaxteri)
thaxteri, 19:27 ..... Chile
Astilbus **ocularis**, 15:50 ..... Formosa
Atheta **algophila**, 8:419 (subg. Halobrectha) ..... California
catharinae, 17:187 (subg. Microdota)
(parallela Bnhr. 1908 =)
duplicata, 8:213 (subg. Atheta)
(unigranosa Bnhr. 1909 =)
fauveli, 17:205 (subg. Dimetrota)
(acuticollis Fvl. 1907 =)
hilaris, 8:420 (subg. Atheta) ..... New Mexico
laetula, 8:421 (subg. Dimetrota) ..... (U. S.)

Atheta maeklini, 17:205 (subg. Dimetrota)
(moesta Mäkl. 1852 =)
neomexicanus, 8:422 (subg. Dimetrota).....New Mexico
nigrita, 8:423 (subg. Dimetrota).....California
nova, 17:187 (subg. Microdota)
(impressicollis Bnhr. 1907 =)
poppiusi, 17:197 (subg. Metaxya)
(praticola Popp. 1908-09 =)
pugnans, 17:218 (subg. Traumoecia)
(militaris Csy. 1911 =)
sericina, 17:186 (subg. Microdota)
(sericata Muls. & Rey, 1875 =)
stercoris, 17:205 (subg. Dimetrota)
(columbica Bnhr. 1907 =)
subpolaris, 8:423 (subg. Metaxya).....Arizona
vega, 17:198 (subg. Metaxya)
(atricornis Sahlb. 1885 =)
vexans, 15:50 (subg. Acrotona).....Formosa
Beyeria, n. gen., 10:118 (genotype, B. vespa)
vespa, 10:119 .....Arizona
Bolitochara unicolor, 6:198.....California
Cyphea wallisi, 19:19.....Manitoba
Diglotta pacifica, 19:17.....California
[Dimetrota **fauveli**; see Atheta]
[" **laetula**; see Atheta]
[" **maeklini**; see Atheta]
[" **neomexicana**; see Atheta]
[" **nigrita**; see Atheta]
[" **stercoris**; see Atheta]
Disoporina, n. subg., 17:205 (genotype, D. ernestinae)
[Euryodma **antennalis**; see Aleochara]
Gnathusa, n. gen., 6:197 (genotype, G. eva)
eva, 6:198 .....California
tenuicornis, 19:26.....Calif., B. C.
Gnypeta inducta, 15:49.....Formosa
[Halobrectha **algophila**; see Atheta]
Homalota opaca, 15:46 .....Formosa
Hydrosmectina macra, 19:23.....California
Hygropora americana, 19:28.....Brit. Columbia
Hypatheta, n. subg., 17:206 (genotype, H. castanoptera)
[Isochara **cribrata**; see Aleochara]
[" **perturbans**; see Aleochara]
Leptusa caseyi, 3:61
(tricolor Csy. 1906 =)
Lipodonta, n. gen., 19:24 (genotype L. veris)
veris, 19:24 .....California
Lypoglossa, n. gen., 17:239 (genotype, L. fenyesi)
Mesaraeus, n. gen., 19:21 (genotype, M. laevigatus)
laevigatus, 19:22 .....Argentina

[Metaxya **poppiusi**; see Atheta]
[" **subpolaris**; see Atheta]
[" **vega**; see Atheta]
[Microdota **catharinae**; see Atheta]
[" **nova**; see Atheta]
[" **sericina**; see Atheta]
Microglotta barberi, 19:30 ..... Virginia
Myllaena insularis, 15:45 ..... Formosa
Ocalea fusca, 8:424 (subg. Ocalea) ..... Arizona
Periergopus, n. gen., 19:25 (genotype, P. sculptus)
sculptus, 19:25 ..... Cameroons
Polylobus thaxteri, 19:29 ..... Chile
Pseudoplandria, n. gen., 19:30 (genotype, P. laeta)
laeta, 19:31 ..... Philippines
[Rhynchodonia **abbreviatus**; see Zyras]
Schistogenia bicolor, 15:47 ..... Formosa
dubia, 15:48 ..... Formosa
Silusa densa, 8:418 ..... California
opaca, 8:418 ..... California
Strophogastra, n. gen., 19:20 (genotype, S. penicillata)
penicillata, 19:20 ..... Manitoba
Symbiochara, n. gen., 7:325 (genotype, S. lativentris)
lativentris, 7:326 ..... California
Tachyusa solskyi, 17:172 (subg. Tachyusa)
(cavicollis Solsky, 1871 =)
Tachyusida luteipennis, 15:47 ..... Formosa
Thaxteria, n. gen., 19:17 (genotype, T. insularis)
insularis, 19:18 ..... Grenada
[Traumoecia **pugnans**; see Atheta]
Zyras abbreviatus, 15:52 (subg. Rhynchodonia) ..... Formosa
contristatus, 17:301 (emendation)
(constritatus Per. 1904 =)

Gall Insects

Plant Galls and Gall Makers, by Ephraim Porter Felt. Pages viii 364, 344 figs. in text. Published by Comstock Publishing Co., May 1940. Price $4.00.

Dr. Felt has given us, in the words of his publisher, "a greatly extended and more comprehensive account of the author's 'Key to American Insect Galls', which was published in 1918. It includes a selected bibliography of recent publications." The text is divided in two sections: I. Introduction. A discussion of types of galls, gall producers, and of the development, distribution, collecting and rearing of galls (35 pages). II. Keys to the galls of various plant families, with concise discussions of host, family and gall characteristics (331 pp.). The clear-cut illustrations will be a great aid in identification work. Dr. Felt has given us an up-to-date book on the subject which should do much to further the study of gall insects and their work in the future.—I. McCracken.

NEW SPECIES OF OTITIDAE FROM CALIFORNIA
(Diptera)

BY SAMUEL C. HARRIOT

I wish to express my sincere thanks to Dr. C. H. Curran for his helpful criticism in the preparation of this paper. The specimens described are from the collections of Dr. Mont A. Cazier, Mr. Bernard Brookman, and Dr. T. H. G. Aitken. The drawing is by Miss Alice Gray.

The following key will help to separate the described species of *Tritoxa* Loew.

Table of Species

1. All black species; posterior cross-vein almost perpendicular. ..... *flexa* Wiedemann
–. Brownish or reddish yellow species.....2
2. Face with a red median longitudinal mark.....4
–. Face without such a red mark; abdomen mostly black.....3
3. Thoracic dorsum with two distinct, whitish, pollinose, longitudinal stripes; third hyaline cross-band arcuated..*incurva* Loew
–. Thoracic dorsum without distinct longitudinal stripes; third hyaline cross-band almost perpendicular and straight..... .....*cuneata* Loew
4. Posterior cross-vein with a spur in the middle....*ra*, new species
–. Posterior cross-vein without such a spur.....*pollinosa* Cole

Tritoxa ra Harriot, new species

(Fig. 1)

A slender reddish yellow species. Length, 6 to 7 mm.

Male: Front opaque, reddish yellow except for a narrow whitish pollinose strip along inner margin of eyes. Occiput shining reddish yellow, posterior orbits white pollinose extending to the oral margin. Face yellowish, whitish in certain lights, a reddish mark in the center extending from oral margin about half way up the face; cheeks wholly brown below the eyes. Front wider than one eye, with sparse black hairs except between the upper pair of frontals; cheeks about three-fifths the eye height. Two pairs of reclinate frontals; verticals moderately strong, ocelars short and proclinate. *Proboscis* brown; palpi yellowish with black hairs. *Antennae* reddish yellow, third segment about one-third as wide as long; arista black and finely pubescent. *Thorax* reddish yellow; mesonotum opaque, the posterior portions of humeri and sides of mesonotum behind suture shining; a dark brown stripe covered with whitish pollinose extending from

slightly before anterior supra-alar bristle to base of wing. Thoracic dorsum with two parallel grayish pollinose stripes; ground color underneath stripes black. Pleura shining, reddish yellow, lightly whitish pollinose when viewed obliquely; sternopleura surrouding the bristle dark brown; a whitish pollinose area above front coxæ. Scutellum shining reddish yellow, dark brown on apical half. *Legs* reddish yellow, tarsi darker. *Wings* brown with three hyaline cross-bands as figured. Longitudinal and cross-veins sinuous; a spur in the middle of posterior cross-vein. Squamae and halteres white. *Abdomen* reddish yellow, with many short black bristles.

Female. Similar to male. Ovipositor shining reddish yellow, darkened at apex of first segment, with short sparse black hairs.

Figure 1. Wing of *Tritoxa ra* Harriot, n. sp.

Holotype, male, Lone Pine, Inyo County, California, June 16, 1937 (Cazier collection). Allotype, female, Lone Pine, Inyo County, California, June 6, 1937 (L. D. Phillips). Paratype, male, Diaz Lake, Owens Valley, Inyo County, California, June 7, 1937 (Aitken collection). The holotype is in the American Museum of Natural History; the allotype, No. 5229, and paratype have been deposited in the California Academy of Sciences.

Euxesta brookmani Harriot, new species

This species traces out to *scutellaris* Curran in his key to American *Euxesta* Loew (Amer. Mus. Novitates, No. 812, p. 12) but is larger, the wings are clear hyaline not whitish, the costal and subcostal cells are much darker, and the fourth vein ends before the tip of the wing. Length, 6 mm.

Female. *Head* shining reddish, the face whitish pollinose; occiput with a brownish spot on either side above the neck. Front slightly wider than one eye, sparsely covered with short black hairs arising from very small punctures. Frontal and ocellar bristles weak, verticals moderately strong. Cheeks in profile a little more than one-half the eye height. Face concave in profile. *Proboscis* black; palpi reddish. *Antennae* reddish, the third segment about twice as long as wide, apex rounded, arista black, thickened on basal seventh, yellowish near base. *Thoracic dorsum* almost wholly bronze black, thickly ashy pollinose. Humeri and sides of mesonotum behind the suture shining reddish. Pleura mostly shining bluish black, propleura and mesopleura often reddish. Sternopleura and hypopleura lightly pollinose. Metanotum and pectus shining bluish black. Scutellum shining reddish. *Legs* reddish. Hind tibiae mostly black. One-half to three-fourths of outer surface of hind femora black, the middle tibiae sometimes darkened. *Wings* clear hyaline, veins yellow except on the dark areas, costal and subcostal cells almost black; triangular apical spot dark brown, extending from costa to fourth vein and to scarcely one-third of distance from posterior cross-vein; fourth vein ending before tip of wing. Squamae and knob of halteres white. *Abdomen* shining black, venter sometimes reddish at base.

Holotype, female, and paratypes, five females, Grotto Canyon, Death Valley, Inyo County, California, March 23, 1940 (Bernard Brookman). All specimens from human excrement. The holotype, No. 5230, has been deposited in the California Academy of Sciences; the paratypes are in the American Museum of Natural History.

Euxesta anna Harriot, new species

Would run to *notata* Wiedemann in Curran's key to American *Euxesta* Loew (Amer. Mus. Novitates, No. 812, p. 13) but the abdomen is differently colored, and the apex of the abdomen of the female is not yellowish. Differs from *pechumani* Curran in that the median brown spot does not extend beyond the second vein.

Female. *Front* dark reddish, narrower than one eye, black toward vertex and along upper margins bordering eyes; a whitish pollinose horizontal stripe bisecting front, sometimes indistinct. Posterior orbits whitish pollinose, broadly so below. Face concave in profile; the upper half of face and parafacials and cheeks whitish pollinose, the parafacials and cheeks reddish

in ground color; oral margin and clypeus shining steel blue. Cheeks about two-thirds as wide as eye height. *Proboscis* and palpi black. *Antennae* reddish, brown above; arista black, thickened on basal sixth. *Thorax* steel blue, thinly whitish pollinose; mesonotum, scutellum and pleura shining. *Legs* black or brownish, the trochanters, knees, tips of tibiae and metatarsi yellowish. *Wings* hyaline, veins yellowish, costal cell tinged with yellowish to a little beyond humeral cross-vein, a brown spot at apex of costal cell extending as far as second vein; stigma yellowish. The apical brown spot extends from costa back to about middle of apical cell. The fourth vein ends before tip of wing. Squamae white; knobs of halteres reddish. *Abdomen* dark shining metallic green or purple. Ovipositor black.

Male. Similar to the female.

Holotype, female, allotype, male, and three female paratypes, Tustin, California, June 14, 1938, J. G. Shanafelt (Cazier Collection). All of the types are in the American Museum of Natural History.

A Capture of Lerodea eufala Edwards at Light

(Lepidoptera, Hesperiidae)

On the night of September 28, 1940, Mansfield took a specimen of *Lerodea eufala* Edw. at a neon sign on Santa Clara Avenue, San Jose, California. The specimen is a female, and is the only record known to us of the species, from Santa Clara County. Tilden has taken the species in the San Joaquin Valley near Newman, where it is quite common, but we know no other case than the above, of its occurrence west of the Mt. Hamilton Range.

The capture of the specimen at light is especially interesting. Previous to this, our only captures of diurnals at lights were of the two species of nymphalids, *Vanessa caryæ* Hbn. and *Vanessa cardui* (L.), both of which are not infrequently taken in this manner.

There are scattered references in the literature to the capture of various butterflies at lights, although butterflies are not considered to be phototropic as a group. This is the first time that the capture of a skipper in such a manner has come to our attention.—J. W. Tilden and G. S. Mansfield.

NOTES ON SOME HYMENOPTERA FROM THE VICINITY OF MT. LASSEN, CALIFORNIA

BY E. G. LINSLEY AND C. D. MICHENER
University of California

The Division of Entomology of the University of California held a summer field course in the Mt. Lassen region of northern California from May 19 to June 22, 1941. Certain of the interesting Hymenoptera collected during that period appear to be worthy of record.

MASARIDAE: Four species of *Pseudomasaris* were collected on June 4, visiting flowers of a single patch of a species of *Phacelia* at Hat Creek, Shasta County. The most abundant species was *P.* (*Cotyledon*) *edwardsii* (Cresson), while a few specimens of *P.* (*Pseudomasaris*) *coquilletti* Rohwer and *P.* (*P.*) *zonalis* (Cresson) were taken. A single female of *P.* (*Toryna*) *vespoides* (Cresson), a species ordinarily found on flowers of *Pentstemon*, was also captured.

EUMENIDAE*: *Odynerus dilectus* Saussure was found nesting in a meadow five miles east of Burney, Shasta County, California, on June 2. The site was a nearly bare patch of soil five inches long by three and one-half inches wide. This area, in a meadow otherwise densely covered by grass, apparently resulted from a shallowly buried boulder which limited the depth of the burrows to one or two inches. Four fresh burrows were present although there was ample evidence of activity in previous years. Each entrance was surmounted by a delicate, erect turret constructed of small mud pellets. Although its inner surface was relatively smooth, the outer was rough with the outlines of the pellets clearly discernable. Interspaces between pellets were frequently open permitting the transmission of light and giving a somewhat lacelike appearance. The turrets were more than 2 cm. in height, from 5 to 5.5 mm. in diameter, with a wall from ½ to 1 mm. in thickness. The burrows were stocked with small caterpillars.

Other species of *Odynerus* were taken as follows: *O. blandus* Saussure, Shingletown, Shasta County, June 2; *O. tigris* Saussure, Big Spring, Shasta County, May 23; Hat Creek, Shasta County, June 1; *O. tigris cytainus* Cameron, Shingletown, Shasta County, June 2; Hat Creek, Shasta County, June 1; *O. spilogaster*, Cameron, Big Spring, Shasta County, May 23; Hat Creek, June 4; *O. exoglyphus* R. Bohart, five miles east of Burney, Shasta County,

* Identifications in this family were kindly made by Dr. R. M. Bohart.

June 9; *O. discogaster* Bequaert, Shingletown, Shasta County, June 2; Hat Creek, June 1; Manzanita Lake, Lassen National Park, June 21; *O. halophila* Viereck, Big Spring, Shasta County, May 23; Hat Creek, June 1, 4; Manzanita Lake. Lassen National Park, June 12; *O. sutteriana* Saussure, Hat Creek, Shasta County, June 1; *O. rugous blandinus* Rohwer, Big Spring, Shasta County, May 23; Hat Creek, Shasta County, June 1; *O. cochisensis* Viereck, Hat Creek, Shasta County, June 1; *O. capra* Saussure, Hat Creek, Shasta County, June 4.

SAPYGIDAE*: *Sapyga aculeata* Cresson was found at Hat Creek, Shasta County, on June 1, visiting flowers of cow parsnip (*Heracleum lanatum*) and *S. elegans* Cresson at Manzanita Lake, Lassen National Park, at the flowers of *Arctostaphylos nevadensis* on June 12. A more common species, *S. fulvicornis* Cresson, was taken on *Rhamnus* at Hat Creek, Shasta County, on June 1 and 4, on *Arctostaphylos* at Hat Creek, Lassen National Park on June 3, on *A. nevadensis* at Manzanita Lake, June 21, and on *Allium* at Black's Mountain, Lassen County, on June 13.

DUFOUREIDAE: Specimens of the recently described *Mimulapis versatilis rufiventris* Timberlake were observed visiting a small, yellow-flowered *Mimulus* at Shingletown, Shasta County, on a number of dates from May 22 to June 21. Both sexes were present throughout this period.

NOMADIDAE: Several large specimens (6½ to 7 mm. in length) of *Oreopasites vanduzeei melantha* Linsley were collected on June 9 flying about a group of nests of *Nomadopsis anthidius* (Fowler). These nests were on an old, unused road five miles east of Burney, Shasta County. A single female of *Oreopasites vanduzeei diabloensis* Linsley was collected at Shingletown. Shasta County, on May 23. No species of *Nomadopsis* were evident in the area at the time.

ANTHOPHORIDAE: A few specimens of the black *Anthophora pacifica infernalis* (Dalla Torre) were found intermixed with the gray *A. p. pacifica* Cresson (the female described as *A. ignava* Cresson) on flowers of *Ribes* at Hat Lake, Lassen National Park, on June 14. The black females are ordinarily found in southern California, the gray ones in the central and northern part of the state. The occurrence of the two together at Hat Lake suggests that they they may be different species, although the males of both are gray and apparently indistinguishable from one another.

MEGACHILIDAE: *Stelis* (*Melanostelis*) *rubi* Cockerell was col-

* Identifications in this family were kindly made by Dr. R. M. Bohart.

lected at Manzanita Lake, Lassen National Park, on June 12, on *Arctostaphylos nevadensis* and four miles south of Hat Creek, Shasta County, June 1 and 10, on *Potentilla* and on a small yellow composite. *Chelostoma phaceliae* Michener was found on flowers of *Phacelia* five miles east of Burney, Shasta County, June 8. On these same flowers at the same time, several specimens of the supposedly southern *Hoplitis* (*Monumetha*) *albifrons maura* (Cresson) were obtained. The occurrence of this southern Californian subspecies is of special interest in connection with the notes on *Anthophora pacifica* recorded above.

BOMBIDAE: Males, queens and workers of *Bombus edwardsii* Cresson were found at Manzanita Lake on June 12, and males and workers at Viola, Shasta County, on May 19. Since these localities are at relatively high elevations (the former at 5800 feet), these dates represent rather early spring season; it is of interest to note that males were present at this time. No males of any other species of *Bombus* were observed. A nest of *edwardsii* was found at Hat Creek, Shasta County, under loose bark of a *Libocedrus* log. Within fifty yards was a nest of *B. vosnesenskii* Radoszkowski in a dead log of yellow pine (*Pinus ponderosa*). Females of the bumblebee parasite, *Psithyrus crawfordi* Franklin, were taken at each of the following localities: Cinder Cone, Lassen National Park, June 19 (P. Hurd); Hat Lake, Lassen National Park, June 5.

AN UNUSUAL RECORD OF OCHLODES YUMA (EDWARDS) (Lepidoptera, Hesperiidae)

In October, 1932, Mr. Edward Doleman, at that time a resident of Modesto, California, kindly gave me some skippers that he had taken in the open country southwest of that city, near the junction of the Stanislaus and San Joaquin rivers.

Among these specimens was a single female of *Ochlodes yuma* (Edw.). This species, originally described from Arizona by W. H. Edwards, is nowhere common. There are records from the Mohave Desert in California, but this specimen from Modesto is the northernmost record that I have been able to find. It shows the tendency, found in certain desert forms, to cross the great valley region in the vicinity of Bakersfield, and thence to progress northward into the more arid portions of the valley region.

The fact that the specimen is a female suggests that the species is established and breeding, though no doubt in small numbers.

I am indebted to Dr. A. W. Lindsey for confirming the specific identity of the specimen.—J. W. TILDEN.

NOTES ON SOME FEEDING AND HIBERNATION HABITS OF CALIFORNIA POLISTES

(Hymenoptera-Vespidae)

BY G. E. BOHART

University of California, Davis

In May, 1939, on the sand dunes near Antioch, California, I noticed a pile of fermenting grapes upon which hundreds of the orange and yellow paper wasp, *Polistes fuscatus anaheimensis* (Provancher), were feeding. Surprisingly the black and yellow *Polistes fuscatus aurifer* (Saussure) were flying around valley live oak trees only a few yards away together with *anaheimensis* and in somewhat greater abundance. No *aurifer* even approached the grapes.

Along Putah Creek near Davis, California, both *Polistes* hibernate in large patches beneath the loose bark of dead and dying cottonwood trees. Here, although they can be found beneath the same strip of bark, they tend to segregate into discreet patches with only an occasional specimen of *anaheimensis* quartered with *aurifer*.

At the above localities parasitism of *Polistes* by the strepsipteran, *Xenos peckii* Kirby, is frequent but nearly confined to *aurifer*. Of the several hundred Strepsiptera extracted from two quarts of about equal numbers of both kinds of wasps, less than ten were found in *anaheimensis*.

These observations indicate that the two *Polistes*, which are apparently morphologically identical except for color and a slight size difference, are physiologically quite different and can live side by side as distinct species. Although in general *anaheimensis* prefers warmer, dryer areas than *aurifer*, in the areas where they are found together, as at Antioch, no intergradation is observable. Perhaps a thorough study of the distribution and habits of our various species and races of *Polistes* together with an analysis of their intraspecific variation would shed some additional light on the perplexing problem of species with only "physiological" isolating mechanisms.

PACIFIC COAST ENTOMOLOGICAL SOCIETY

Organized August 15, 1901

E. O. Essig, *President* — H. M. Armitage, *Vice President*
E. G. Linsley, *Secretary* — E. R. Leach, *Treasurer*

ARTICLES OF INCORPORATION

Know All Men by These Presents:

That we, the undersigned, do hereby voluntarily associate ourselves together for the purpose of forming a non-profit corporation under the laws of the State of California, and we hereby certify that:

First: The name of this corporation shall be PACIFIC COAST ENTOMOLOGICAL SOCIETY.

Second: The purposes for which this corporation is formed are to promote, sponsor, foster and stimulate research in the field of entomology; to provide facilities and opportunities for research and analysis of any and all phases of entomology by lectures, forums, discussions, experiments, surveys, public meetings, exhibitions, courses, classes, conferences, symposia and analyses; to publish books, pamphlets, monographs and in general to disseminate information about entomology and the results of entomological research; to accumulate and record historical facts and materials relating to entomology in general; to give, grant and sponsor the granting of fellowships and awards for study or research in the field of entomology; and in general, to act as a medium for the exchange of information and knowledge and research in entomology between the members of this corporation and scientists and entomologists throughout the world. To do any and all things necessary, suitable, convenient or proper for or in connection with or incidental to the accomplishment of any of the purposes, or the attainment of any one or more of the objects herein enumerated or designed, directly or indirectly to promote the interests of this corporation, and to do any and all things and to exercise any and all powers which may now or hereafter be lawful for this corporation to do or to exercise under the laws of the State of California; *provided, however,* that this corporation is and shall be a corporation which does not contemplate pecuniary gain or profits to the members thereof. No part of the net earnings of this corporation shall inure to the benefit of any member whatsoever, and no part of the activities of this corporation shall be or constitute carrying on propaganda or otherwise attempting to influence legislation.

Third: The county in the State of California where the principal office for the transaction of the business of this corporation is to be located is the City and County of San Francisco.

Fourth: The number of this corporation's directors who shall be known as the members of the Executive Board of this corporation is nine (9), and the names and addresses of the persons who are to act in the capacity of members of the Executive Board until the election of their successors are:

E. Gorton Linsley, University of California, Berkeley.
H. M. Armitage, State Dept. of Agriculture, San Francisco.
Peter C. Ting, State Dept. of Agriculture, San Francisco.
E. R. Leach, 217 Hillside Avenue, Piedmont, California.
R. L. Usinger, University of California, Davis.
E. O. Essig, University of California, Berkeley.
Gordon F. Ferris, Stanford University, California.
Edward S. Ross, California Acad. of Sciences, San Francisco.
Carl. D. Duncan, San Jose State College, California.

The number of the members of the Executive Board may be changed from time to time by the by-laws duly adopted; *provided, however,* that the number of the members of the Executive Board shall not be less than three (3).

Fifth: The authorized number and qualifications of the members of this corporation, the different classes of membership, if any, the property, voting and other rights and privileges of each class of membership, and the liability of each and all classes of members to dues or assessments, and the method of collection thereof, shall be as may be set forth in the by-laws of this corporation.

Sixth: The name of the existing unincorporated association which is hereby being incorporated is Pacific Coast Entomological Society.

IN WITNESS WHEREOF, the president and secretary of Pacific Coast Entomological Society, an existing unincorporated association, have hereunto set their hands this 28th day of August, 1940.

E. GORTON LINSLEY,
President of Pacific Coast Entomological Society, an Existing Unincorporated Association.

PETER C. TING,
Secretary of Pacific Coast Entomological Society, an Existing Unincorporated Association.

Endorsed and filed in the office of the Secretary of State of the State of California, September 11, 1940.

PAUL PEEK, *Secretary of State.*
By CHAS. J. HAGERTY, *Deputy.*

BY-LAWS

ARTICLE I

OFFICES

SECTION 1. The principal office for the transaction of the purposes of the corporation is hereby fixed and located at the California Academy of Sciences, Golden Gate Park, in the City and

County of San Francisco, State of California. The Executive Board is hereby granted full power and authority to change said principal office from one location to another in said county.

ARTICLE II

EXECUTIVE BOARD

SECTION 1. Subject to the limitation of the Articles of Incorporation, the By-Laws, and the laws of the State of California, all corporate powers shall be exercised under the authority of the board of directors who shall be known as and who are herein designated as the members of the Executive Board of the corporation. Without prejudice to such general powers, but subject to the same limitations, it is hereby expressly declared that the Executive Board shall have the following powers:

First: To select or remove all the other officers, agents, and employees of the corporation, prescribe such powers and duties for them as may not be inconsistent with law, with the Articles of Incorporation, or By-Laws, fix their compensation and require from them security for faithful service.

Second: To make such rules and regulations in respect to the management of the affairs of the corporation not inconsistent with law, with the Articles of Incorporation, or the By-Laws, as they may deem best.

The action of the members of the Executive Board shall be subject to the holders of the membership of the Society and none of its acts shall conflict with action authorized by such membership.

SEC. 2. The authorized number of members of the Executive Board shall be nine (9) until changed by an amendment of the Articles of Incorporation or by an amendment of this section as provided by law.

SEC. 3. The members of the Executive Board shall consist of the chairmen of standing committees, the officers of the Society, and the editor of the Pan-Pacific Entomologist. In the event that one person holds two or more of the above positions, additional members-at-large shall be elected in the same manner as the regular elective officers, to fill the Executive Board of nine (9) members. The members of the Executive Board who shall be officers of the corporation shall serve until the next annual meeting of the members of the Society, and until their successors are duly elected and qualified. The members of the Executive Board who serve as such because of their positions as chairmen of the standing committees, shall serve until their successors have been duly elected by the membership of such committees, and have qualified.

SEC. 4. Meetings of the members of the Executive Board for any purpose or purposes shall be called at any time by the president, or if he be absent, unable, or refuse to act, by any three (3) members of the Executive Board,

Notice of the time and place of any such meetings shall be given by telephone, telegram, or written communication deposited in the United States mail, postage prepaid, at least twenty-four (24) hours prior to the time fixed for such meeting.

SEC. 5. The Executive Board shall fill, by appointments, any vacancies occurring in any elective office between annual elections.

SEC. 6. The Executive Board shall appoint an Auditing Committee at the regular meeting prior to the annual meeting, to review the financial records of the Society and to report to the members of the Society at the annual meeting.

SEC. 7. A majority of the authorized number of Executive Board members shall be necessary to constitute a quorum for the transaction of business. Every act or decision done or made by a majority of the members of the Executive Board, shall be the act of the Executive Board unless a greater number be required by law or by the Articles of Incorporation.

ARTICLE III

OFFICERS

SECTION 1. The officers of the Society shall be a president, vice president, secretary, and treasurer.

SEC. 2. At the regular fall meeting in the early part of September, a nominating committee of three members shall be appointed by the president from among those members who are not holding any elective office at the time and who did not serve on the nominating committee of the previous year. It shall be the duty of this committee to nominate candidates for the offices to be filled at the annual meeting. Nominations may likewise be made from the floor.

SEC. 3. The president, vice president, secretary, and treasurer shall be elected by a majority of the members present (not less than 10) at the annual meeting to serve for one (1) year, their term of office beginning at the close of the annual meeting at which they were elected, and until their successors are elected and qualified.

SEC. 4. The president and vice president shall hold office for not longer than two consecutive years but are eligible for reelection after the lapse of one year from the time of leaving office. The secretary and the treasurer shall be selected with a view to continuity of tenure of their offices and hence, other things being equal, may be reelected each year, subject to their own desires in the matter.

SEC. 5. No member shall hold more than one elective office at one time.

SEC. 6. Vacancies occurring in any elective office between the annual elections shall be filled by action of the Executive Board.

ARTICLE IV

DUTIES OF OFFICERS

SECTION 1. It shall be the duty of the president to preside at all meetings, appoint temporary committees including a nominating committee, to appoint members to fill vacancies in standing committees, to act as *ex-officio* member of all committees, to arrange details of meetings in cooperation with the program committee, and to call any special meetings. At the annual meeting he shall report on the state of the Society and deliver an annual address to

be published in the Pan-Pacific Entomologist or elsewhere according to the judgment of the president and the editorial board.

SEC. 2. The vice president shall assume all responsibilities of the president in the event of the absence of the latter. The president and vice president, being absent, a chairman may be selected *pro tempore* from among the members present. The temporary chairman shall conduct such business as is absolutely necessary, postponing consideration of other matters until such time as the regular officers may be in attendance.

SEC. 3. The secretary shall send out notices of all meetings at the order of the president, handle all correspondence of the Society, keep a record of members, of members and visitors present at each meeting, and of the proceedings of said meetings, and submit an edited manuscript of the proceedings for each year to be published in the January number of the Pan-Pacific Entomologist.

SEC. 4. The treasurer shall handle all financial matters of the Society and shall maintain a bank account in the Society's name. Current receipts, unless otherwise specified, become a part of the general funds of the Society, administered by the Executive Board through the treasurer who is hereby granted authority to expend the money necessary to send out notices of meetings and to defray expenses, send out bills, etc., in connection with publication of the Pan-Pacific Entomologist.

ARTICLE V

COMMITTEES

SECTION 1. The Publication Committee, Program Committee, Historical Committee, and Membership Committee shall be known as standing committees, members to be appointed by the president when vacancies occur. Chairman shall be elected by the members of each committee from its own membership.

SEC. 2. The Publication Committee shall be responsible for the publications of the Society. It shall consist of six members appointed for three-year terms, groups of two expiring in successive years. The Publication Committee shall meet at least once a year before the annual meeting to formulate an annual report for the Society. Four members shall constitute a quorum.

The Publication Committee shall appoint an editorial board for the Pan-Pacific Entomologist consisting of an editor, assistant editor, two members of the Publication Committee to act in an advisory capacity to the editor, and such additional members as are deemed necessary. All appointees of the Editorial Board shall serve at the discretion of the Publication Committee.

SEC. 3. It shall be the duty of the Historical Committee of five members to cooperate with the California Academy of Sciences in accumulating historical entomological material to be deposited with the Academy.

SEC. 4. It shall be the duty of the Membership Committee of three members to consult with applicants or prospective members, to acquaint them with the purposes of the Society and with the obligations incurred with membership, and to consider such persons

and propose their names, if satisfactory, to the Society for election to membership. It shall further be the duty of the committee to consider members' applications for associate and student status and to review the membership from time to time for persons to be nominated as Honored members.

SEC. 5. It shall be the duty of the Program Committee to plan the various meetings, including the field days, arrange for speakers, encourage members to bring exhibits and contribute short notes and observations, and in other ways to improve the meetings of the Society. The committee shall inform the secretary of the Society as to the programs of the meetings in sufficient time to permit the issuing of the specified notices of the meetings.

ARTICLE VI

MEMBERS

SECTION 1. Membership shall be open to persons interested in insects or other Arthropoda.

SEC. 2. An applicant for membership will communicate with a member of the Membership Committee. The Membership Committee shall then consider the applicant's name at the next regular meeting of the Society. An affirmative vote of two-thirds of the members present at any meeting is required, whereupon the applicant becomes a regular member.

SEC. 3. The annual dues shall be $3 for regular members, $2 for associate and subscribing members and $1 for student members. The dues are payable in advance on or before January 1st of each year. Payment for portions of a year may be prorated on the basis of the number of issues of the Pan-Pacific Entomologist still to appear after the applicant's election. Members two years in arrears shall be dropped after written notice. Such members may be reinstated by payment of back dues. Each additional member in the immediate family of a regular member may pay dues of only $1 per year, but this shall entitle said family to only one set of the Society's publications.

SEC. 4. Any member may become a life member by the payment of $50 in one sum and shall thenceforth be freed from payment of annual dues.

SEC. 5. Any regular member who lives at such a distance from the place of meeting that attendance is not practicable may, upon request, be made an associate member. The dues for associate members shall be $2 per year. Associate members may resume regular status by payment of the regular $3 dues.

SEC. 6. Students registered at any recognized institution of higher learning are eligible for student membership. Student members shall have all of the privileges of regular members with the exception of the receipt of the Society's publications.

SEC. 7. Any member who, through long and distinguished service to the Society, is deemed worthy of special recognition may be elected an Honored member. Honored members shall be nominated by the Membership Committee at the meeting prior to their election. Such members shall be free from the payment of dues or other

financial obligations but shall retain all privileges of regular members.

SEC. 8. All members, except for student members or as herein otherwise provided shall receive the publications of the Society with no additional charge.

SEC. 9. Any member desiring to resign in good standing from the Society may do so upon request to the Membership Committee. No resignation shall be accepted if the member's dues or other financial obligations are delinquent.

ARTICLE VII

MEETINGS

SECTION 1. At least four regular meetings shall be held each year, preferably on the first Saturday of September, December and March with an annual Field Day during April or May. Notice of such meetings shall be given to the members, either personally or by mail, or other means of communication, charges prepaid, addressed to such member at his address, if any, appearing upon the books of the Society, or given by him to the Society for the purpose of notice. All such notices shall be sent to the members not less than ten days before such meeting.

SEC. 2. Special meetings may be called at any time at the discretion of the president, or shall be called at the request of five members, provided that written notice is sent to all members at least two weeks in advance of the meeting.

SEC. 3. The December meeting of each year shall be known as the Annual Meeting. At this time, in addition to the election of officers, and the transacting of other regular and special business, annual reports of all committees shall be submitted as well as an annual report of the treasurer.

SEC. 4. The presence in person of ten members of the Society at any meeting, regular or special, shall constitute a quorum for the transaction of business, but less than a quorum may adjourn any meeting from time to time and the meeting may be held as adjourned without further notice.

ARTICLE VIII

DELEGATES

The Society may accredit delegates, appointed by the president, to national and international meetings such as the American Association for the Advancement of Science and the International Entomological Congresses. Members may be accredited by a two-thirds vote of the members present at any meeting.

ARTICLE IX

AMENDMENTS

These By-laws may be amended or repealed by the Executive Board, subject always to the power of the members to change or repeal such By-Laws; or by the vote or written assent of a majority of the members; or by the vote of a majority of a quorum at a meeting of the members duly called for the purpose of amending the By-Laws.

PROCEEDINGS

One Hundred and Sixty-fourth Meeting, January 25, 1941

Meeting held at 10:00 a.m. in the entomological laboratories of the California Academy of Sciences, San Francisco. President Essig in the chair. The following members were present: E. O. Essig, E. G. Linsley, E. R. Leach, J. W. MacSwain, G. E. Bohart, N. Stahler, G. F. MacLeod, R. L. Usinger, C. D. Duncan, A. E. Michelbacher, E. S. Ross, H. L. McKenzie, W. C. Reeves, B. Brookman, A. C. Smith, E. A. Smith, G. F. Ferris, O. B. Cope, C. D. Michener, T. H. G. Aitken, A. W. Brereton, E. C. Van Dyke, R. C. Miller, W. E. Simonds. Visitors were present as follows: R. Van Buren, R. M. Yancey, E. Venturino, L. McKinney, J. Gustafson, M. Marquis, S. Vrana, V. Ring, F. McFeely, K. Frick, E. G. Meyers, G. S. Mansfield, R. Kong, H. Madsen, S. Piazza, R. J. Buckner, W. Y. Chong, B. Prendergast, N. F. Hardman, L. H. King, C. A. Fleschner, T. Aarons, and J. S. Harville.

Mr. E. R. Leach reported that the finances were in good condition and that there had been little unfavorable reaction to the increase in subscription rate for the Pan-Pacific Entomologist. The membership committee proposed the names of Mr. Wallace Pearce, Mr. Lawrence H. King and Mr. Charles A. Fleschner for membership. They were unanimously elected.

Mr. G. E. Bohart reported briefly on a recent trip to Mexico in the company of Messrs. N. Stahler, H. H. Welsh, and T. R. Crawford. The group left Berkeley on December 20, 1940, and returned on January 11, 1941. The first good collecting was encountered at Tamazunchale. Here there was an abundance of leaf feeders and fungus insects. Good collecting was also found in the Sierra Madre Oriental but the Mexican Plateau was found to be too dry. Mr. Bohart also discussed a side trip to Vera Cruz. In conclusion he exhibited a box of Mexican membracids and a silken embiid cocoon which had been found on a twig. Commenting upon the embiid cocoon, Mr. E. S. Ross stated that cocoon formation in this group appears to be a mechanism to assist in surviving adverse conditions. Mr. Stahler added a few observations to those of Mr. Bohart, noting in particular the occurence of thrips breeding in the nest of a ceratinid bee and a heavy infestation of psyllid galls on avocado leaves at Rancho San Gracias.

Mr. Leach reported on a four months' trip during which he visited all the major museums of the eastern United States. He commented that he saw no insect collection better housed than that of the California Academy of Sciences.

President Essig then presented Mr. Michener who addressed the Society on "The biology of *Pogonomyrmex californica*." His observations, covering a sixteen-year period, revealed that this species of harvester ant closes its nest each night during the milder and warmer portions of the year and closes it entirely during the three winter months. All activities seem to be correlated with temperature. They are sluggish at 70° F., exhibit maximum foraging

activity when the surface temperatures are between 90° and 115°F., and generally retire to the nest when the temperature is over 120° F. Swarming occurs more than once each season, usually in the late morning of clear hot days in June and July. Experiments suggested that the ants detect their food (seeds) by means of antennal sensillae but that the eyes are important in guiding them back to the nest.

The President then introduced Mr. O. B. Cope who presented an illustrated paper on "The Morphology of the Psocoptera." Mr. Cope called attention to the better techniques, stains, mounting media, and optical equipment available for the present-day morphologist. He also emphasized the Ferris approach in which every structure must be accounted for and the "new structure" explanation used only as a last resort. Mr. Cope discussed the question of landmarks, particularly the anterior articulation of the mandibles, the anterior tentorial pits and the posterior tentorial pits, illustrating their use with comparative illustrations of Psocoptera and Mallophaga. The maxillary pick of the Psocoptera is interpreted by Mr. Cope as the lacinia.

Following Mr. Cope's report the meeting adjourned.—E. G. LINSLEY, Secretary.

One Hundred and Sixty-fifth Meeting, Februaury 15, 1941

Meeting held at 10 a.m. in the entomological laboratories of the California Academy of Sciences, San Francisco. The following members were present: E. O. Essig, E. G. Linsley, W. E. Simonds, A. E. Michelbacher, H. M. Armitage, K. S. Hagen, C. D. Duncan, P. C. Ting, M. M. Barnes, C. D. Michener, G. E. Bohart, W. C. Reeves, G. F. Ferris, E. C. Van Dyke, W. M. Pearce, E. S. Ross, J. W. Tilden, E. A. Smith, A. C. Smith. Visitors were present as follows: T. Aarons, M. Marquis, D. Murphy, E. C. Meyers.

President Essig announced that the summer meetings of the Pacific Division A. A. A. S. would be held in Pasadena in June and that the entomological program would include a symposium on systematics. He also called attention to the National entomological meetings to be held in San Francisco in December and discussed participation in the program by the Society.

Mr. Tilden exhibited two *Pleocoma* from San Luis Obispo County. Dr. Linsley commented that this was the first record of the genus from that county and stated that the species appeared to be related to *hirsuta* Davis from the Sierra Madre. He also commented that species had been captured this winter in the San Jacinto and Santa Lucia Mountains, providing the first records from these geographically important ranges.

Mr. Armitage called attention to the recent interception of live European corn borer larvae from China. These had been sent to the United States for use as bird food.

Mr. Bohart stated that he was conducting observations on an *Andrena* colony which had been submerged five feet under water during the recent heavy rains.

President Essig then presented Mr. E. S. Ross, who addressed the Society on "The biology of the Embioptera." Mr. Ross introduced his subject by describing the features of the hypothetical ancestor of the group. He then theorized that in some manner tarsal spinning glands appeared in the fore-tarsi of this ancestor and that this probably marked the beginning of a unique evolutionary trend resulting in the order Embioptera. The spinning organs found in modern forms were described in detail and compared with those found in the dipterous family Empididae. The evidence for the great antiquity of the silk glands and the morphological adaptations apparently in harmony with their presence were reviewed. In conclusion, the knowledge of the three species of the order occurring in California—*Gynembia tarsalis* Ross, *Anisembia rubra* Ross and *Oligotoma nigra* Hagen—was discussed.

After a discussion of Mr. Ross' paper the meeting adjourned.—E. G. LINSLEY, Secretary.

One Hundred and Sixty-sixth Meeting, March 15, 1941

Meeting held at 10 a.m. in the entomological laboratories of the California Academy of Sciences, San Francisco. President Essig in the chair. The following members were present: E. O. Essig, E. G. Linsley, G. F. Ferris, A. E. Michelbacher, M. A. Stewart, R. L. Usinger, W. H. Lange, E. S. Ross, O. B. Cope, J. O. Martin, E. R. Leach, W. C. Reeves, T. F. Kelley, W. M. Pearce, M. M. Barnes, N. Stahler, W. E. Simonds, P. C. Ting, G. E. Bohart, R. C. Miller, K. S. Hagen, C. D. Michener. Visitors were present as follows: F. M. Frost, T. Aarons, G. A. Noble, H. E. Cott, C. D. Grant, W. J. Perry, B. Prendergast, T. M. Dunkle, F. B. Blevins, G. F. Smith, F. W. Fisk, F. H. Rindge, F. J. Driver.

The membership committee recommended the following for membership in the Society: Mr. Dewey Raski, Mr. Ray F. Smith, and Mr. H. Edwin Cott. They were unanimously elected.

The president announced that the next meeting would be a field trip and asked Dr. Usinger, Dr. Michelbacher, and Mr. Cope to serve as a committee to select the time and place of the meeting.

Dr. Usinger discussed the biology of the Rhaphididae as illustrated by a species of *Inocellia*. He stated that eggs had been laid on walnut bark, and that the immature larvae, prepupae, and pupae were found under bark.

Mr. Ting spoke of the discovery of the European weevil, *Cosmobaris scoparia* Germar, on cat-tails near Tracy—the first California record for the species.

Professor Essig then presented the speakers for the day, Professor Ferris, Dr. Stewart, and Dr. Usinger, who participated in a symposium on ectoparasitic insects.

Professor Ferris discussed ectoparasites in general. He pointed out that there were three entirely ectoparasitic orders, Siphonaptera, Anoplura, and Mallophaga, the origins of which are obscure. Of the group with ectoparasitic fractions, the Hippoboscids, Streblids, and Nycteribiids were obviously derived from higher

Diptera. Professor Ferris also discussed *Platypsylla, Leptinus, Leptinellus* and several staphylinids as well as the Dermapteran genus *Hemimerus* and the fur moth of the sloth.

Dr. Stewart confined his discussion to the phylogeny of the fleas. He reviewed the various theories as to the origin of the fleas, casting doubt on the classical view that they were derived from the Diptera.

Dr. Usinger discussed the various ectoparasitic Hemiptera, especially the *Cimicidae* and *Polyctenidae*. He emphasized convergence in evolution of these groups. In connection with the Polyctenids he discussed their distribution in some detail, comparing it with the distribution of the various groups of bats which serve as hosts.—E. G. LINSLEY, Secretary.

One Hundred and Sixty-seventh Meeting, April 17, 1941

The annual spring field trip was held at Green Valley Falls, Solano County, California. The following members were present: E. O. Essig, E. G. Linsley, H. M. Armitage, E. C. Van Dyke, P. S. Lange, W. H. Lange, B. Brookman, L. W. Grabe, J. W. MacSwain, T. Aitken, W. M. Pearce, J. B. Steinweden, C. D. Michener, N. E. Good, A. E. Michelbacher, J. W. Tilden, C. D. Duncan, A. C. Smith, E. A. Smith.

Visitors were present as follows: Dr. and Mrs. W. M. Hoskins, Mrs. H. M. Armitage, Mrs. L. W. Grabe, Mrs. J. W. MacSwain, Mrs. E. G. Linsley, Mr. Nuri Malih, Mrs. C. D. Michener, Mr. and Mrs. Erwin S. Laeffler, Miss Phyllis Woerner, Mrs. N. E. Good, Mr. and Mrs. H. Mauerhan, Mrs. E. O. Essig, Mr. G. Winton Jones, Miss Mary Isabel Essig, Mrs. A. E. Michelbacher, Mr. Henry Loctani, Mr. Kenneth Frick, Mr. Ernest G. Meyers, Mrs. C. D. Duncan, Mr. J. R. Walker, Mr. G. S. Mansfield.

The group assembled at the Green Valley Picnic Grounds at 10:00 a.m. The morning was largely spent in collecting along the trail to the falls and the afternoon in the vicinity of the picnic grounds. Collecting was only moderately good but several interesting captures were reported.—E. G. LINSLEY, Secretary.

One Hundred and Sixty-eighth Meeting, September 13, 1941

Meeting held at 10:00 a.m. in the entomological laboratories of the California Academy of Sciences, San Francisco. President Essig in the chair. The following members were present: E. O. Essig, E. G. Linsley, E. C. Van Dyke, A. E. Michelbacher, W. F. Barr, E. Cott, C. A. Fleschner, W. C. Reeves, C. D. Michener, E. R. Leach, W. M. Pearce, J. J. DuBois, J. W. Tilden, C. D. Duncan, E. S. Ross, G. F. Ferris, A. C. Smith, R. L. Usinger, R. G. Wind, and R. C. Miller. Visitors were present as follows: B. Newhouse, G. T. Okumura, R. E. Suggett, W. Ferguson, T. Russell, H. E. Records, H. Jenke, W. Y. Chong, F. R. Barron, E. R. Stanton, J. R. Fisher, R. L. W. Potts, P. D. Gerhardt, D. R. Hansen, H. Kido, J. R. Garvey, R. H. Soroker, K. D. Snyder, B. Prendergast, J.

Bruce, M. Michener, P. Woerner, H. P. Chandler, V. M. Tanner, A. P. McKinstry, J. R. Walker, C. Anderson, W. Sibray, R. C. Husbands, F. Driver, A. H. Caldwell, Jr., and A. M. Adamson.

The membership committee proposed the following names for membership: Mr. A. P. McKinstry and Mr. Wing You Chong. They were unanimously elected.

President Essig raised the question of meeting times; and, after considerable discussion, it was moved, seconded, and passed that future meetings be held on Saturday afternoons, insofar as possible, rather than Saturday mornings.

Dr. Linsley reported the action taken by the Pacific Slope Branch of the American Association of Economic Entomologists, meeting at Pasadena in June, with regard to the subject of entomological nomenclature and suggested that our Society might take parallel action. Considerable discussion followed, all in the affirmative, participated in by Professor Essig, Professor Ferris, Dr. Usinger, and others. It was moved, seconded, and passed that the President appoint a committee to frame a resolution on nomenclature, to be directed to various entomological societies of North America.

Dr. Tanner spoke of his work in Provo, Utah, and stated that he was much interested in the Sonoran fauna and the lines of demarcation of the fauna within his state.

Dr. Adamson, of the Imperial College of Agriculture at Trinidad, discussed that island from the entomological standpoint. He pointed out that although politically Trinidad belongs to the British West Indies, biogeographically its affinities are with South America. He emphasized the richness of the fauna by noting that 700 species of butterflies were known from the island, although it is only 40 miles wide and 80 miles long.

Mr. Pearce reported the capture in a single nest of *Neotoma* at Hayward, California, of five new species of spiders, including four new genera and one family new to the United States, as well as a new centipede.

Mr. Reeves discussed his summer work in the Yakima Valley, Washington, where he and others conducted an epidemiological investigation of western equine and St. Louis type encephalitis. In the course of the investigation collections were made of all blood-sucking arthropods. Methods used included trapping, net collecting, animal examinations, and shelter examination. About 15,000 specimens were identified including about 10,000 mosquitoes, 4,000 miscellaneous blood-sucking Diptera, and 1,000 miscellaneous insects and arthropods, 20 species of mosquitoes, and 8 species of tabanids were found in the Yakima valley.

Mr. Wind reported on a collecting trip in Australia, New Guinea, and adjacent islands. He mentioned the difficulties involved in collecting in these areas and stated that he had captured more than 100,000 specimens of insects, exclusive of Lepidoptera.

Mr. Gerhardt discussed the life history of the Pyrrhocorid,

Euryophthalmus cinctus californicus, and noted that the tachinid, *Trichopoda pennipes*, was an effective parasite of the nymphs and adults.

Dr. Van Dyke reported on a two months collecting trip in southern California. With the Citrus Experiment Station at Riverside as a headquarters he visited Borego Valley, Morongo Valley, the Charleston Mountains of Nevada, and other localities. He particularly mentioned collecting numbers of Apioceratids from flowers, where they poised like hummingbirds.

Dr. Duncan discussed moulting in the dampwood termite (*Zootermopsis*). He observed that in the moulting process the wings appeared as nipple-shaped protuberances in the position of the wing pad and then expanded completely at the base, later at the middle and apex. About 1½ hours were required for the process.

Mr. Michener spoke of the entomology summer course of the University of California, held at Mount Lassen, California. He discussed collecting in general and mentioned particularly large spring dispersal flights of hydrophilids, dytiscids, bark beetles and aradids.

Mr. Husbands discussed field studies with *Lygus* spp. near Hemet, Riverside County, California. He mentioned that individual specimens had been marked with casein paint but that he had not been able to obtain a very high percentage of subsequent recoveries.

Following these reports the meeting was adjourned.—E. G. LINSLEY, Secretary.

One Hundred and Sixty-ninth Meeting, October 18, 1941

Meeting held at 2:15 p.m. in the entomological laboratories of the California Academy of Sciences, San Francisco, California. Mr. H. M. Armitage in the chair. The following members were present: H. M. Armitage, E. G. Linsley, G. F. Ferris, B. Brookman, A. E. Michelbacher, R. L. Usinger, E. A. Smith, A. C. Smith, E. R. Leach, R. F. Smith, O. B. Cope, C. D. Michener, D. DeLeon, C. D. Duncan, R. C. Miller, K. S. Hagen, B. Prendergast, N. E. Good, A. P. McKinstry, E. Cott, J. O. Martin, and E C. Van Dyke. Visitors were present as follows: E. G. Meyers, K. Frick, P. D. Gerhardt, J. R. Walker, W. H. Nutting, R. H. L. Potts, J. F. Lamiman, H. P. Chandler, D. L. Dow, and F. J. Driver.

The membership committee proposed the following for membership in the Society: Mr. Robert H. L. Potts, Mr. Kenneth Frick, Mr. Ernest Meyers, Mr. George Mansfield, Mr. Harry Chandler, and Dr. J. F. Lamiman. It was moved, seconded, and passed that the secretary cast a unanimous ballot for the election of the proposed members.

Mr. Armitage announced that pursuant of the authorization of the Society at its last meeting, President Essig had appointed a committee on nomenclature composed of G. F. Ferris (chairman), E. G. Linsley, and R. L. Usinger to draft a proposal for an American Com-

mittee on Entomological Nomenclature and an American Entomological Code. The committee reported as follows: "The present International Code of Zoological Nomenclature has been a most effective instrument in bringing about some degree of uniformity in nomenclatorial practice throughout the world. However, the code as it now stands represents the maximum of agreement which could be achieved among zoologists representing all fields, all parts of the world and many diverse points of view. As a result, there are questions upon which agreement was not achieved and consequently many unsolved nomenclatorial problems still remain. These include not only matters which are not covered by the Code and subsequent opinions, but problems upon which the International Commission has not ruled either because they have not yet been formally presented or because the Commission itself has been unable to reach an agreement.

"The present condition of the world indicates that the International Commission of Zoological Nomenclature is not likely soon to resume its functions; and yet the need for continued and progressive development and interpretation of the rules of nomenclature remains and is not lessened by these disturbed conditions. This need is felt especially by systematic entomologists, who, as a group, must deal with thousands of names where workers in other zoological fields deal with hundreds or even dozens. Our literature is enormous, our problems many times multiplied. Difficulties which in some fields of zoology may appear but occasionally are recurrent with the entomologist. Progress in the development of a sound nomenclatorial system is so important that it should not be allowed to falter merely because zoologists in other fields or as a group may at the moment be unable to deal with these matters effectively.

"The British entomologists (1928) have already set a precedent but their suggestions still remain, after 13 years, unacted upon by the International Commission. It therefore seems justifiable for American entomologists, accepting the present International Code, to carry on where it leaves off and formulate a still more effective code of nomenclature for entomologists. It is recognized that sectional codes in the past, at least in some cases, have hindered uniformity in nomenclatorial practice. However, if proposed in the above spirit without sacrificing any of the hard-earned gains of the International Code, an entomological code might well serve as a transition through these difficult times and lead the way to eventual expansion when the International Commission again becomes functional.

"Any such action on the part of American entomologists would have neither significance nor acceptance unless it were undertaken by the Entomological Society of America and the American Association of Economic Entomologists. The Pacific Coast Entomological Society therefore respectfully offers the enclosed suggestions for the consideration of the Entomological Society of America and the American Association of Economic Entomologists: (1) That an American Commission on Scientific Nomenclature in Entomology be established. (2) That this Commission be composed of indi-

viduals who are now, and may expect to be for some time to come, engaged actively in systematic work in entomology and are especially concerned with and competent to consider the problems of nomenclature. (3) That this Commission be composed of at least ten and not more than fifteen members who are as far as is practicable representative of the entomological organizations and entomologically active geographical areas of the United States and Canada. (4) That in order to form this Commission the Entomological Society of America and the American Association of Economic Entomologists each appoint one member (preferably prior to the 1941 meetings), these two to select the remaining members of the Commission, the member representing the Entomological Society of America to act initially as chairman. (5) That this Commission be instructed to study the present International Code of Zoological Nomenclature and the Report of the British National Committee on Entomological Nomenclature (1928). (6) That this Commission be instructed to receive from entomologists and give consideration to suggestions for additions to the existing International Code of Zoological Nomenclature. (7) That the Commission prepare a report to be submitted at the 1942 annual meeting of the national entomological societies, this report to present the basis for a Code of Entomological Nomenclature."

After discussion by various members the motion was made, seconded, and unanimously passed that the above recommendations be draughted in the form of a letter and sent to the Entomological Society of America and the American Association of Economic Entomologists for their consideration.

Mr. Armitage announced a Liaison Committee as appointed by Professor Essig to serve in connection with the national Entomological meetings at San Francisco as follows: H. M. Armitage (chairman), C. D. Duncan, H. H. Keifer, E. G. Linsley, and R. F. Smith.

Dr. Lamiman reported the discovery of an interesting new tarsonemid mite living in the tracheae of *Anasa tristis*. He stated that thus far the mites had been found only in the larger tracheae of adult bugs and that eggs, immature stages, and adults were present.

Dr. Michelbacher reported that the tomato mite (*Phycoptes destructor*), a free living eriophyid, was very bad in California this year. He stated that it was being controlled primarily by sulfur dusts and that canning tests were being conducted in order to determine the effect of sulfur on flavor and color of canned tomato products. Mr. Armitage spoke of the fact that 10,000 bags of potatoes shipped from San Francisco had arrived in Manila infested with potato tuber moth. The matter had assumed such importance that the State Department had become involved in an attempt to determine responsibility for the infestation.

Dr. Usinger spoke of psocid infestations on bags of grain. He remarked that the psocids occurred on the outside of the sacks. Professor Ferris commented that psocids avoid covering and that they die rapidly in closed containers.

Mr. Ray Smith spoke of his studies of bacterial diseases of the alfalfa butterfly. He mentioned that large infestations this year had been killed by bacteria, possibly by a *Micrococcus*.

Mr. Armitage then introduced the first speaker on the program, Mr. R. H. L. Potts, who presented an illustrated talk on "Insect Collecting in Mexico." Mr. Potts stated that he had entered Mexico at Laredo and driven southward, collecting at Monterey and other localities including Tamazunchale. In the valley of Orizaba collecting was done between elevations of 1500 and 4000 feet. In the vicinity of Oaxaca and from Taxco to Acapulco a delay in the advent of rains limited collecting. Mr. Potts reported his best collecting in the Vera Cruz region. During his six weeks' stay in Mexico he covered about 5000 miles, returning with about 1500 specimens of Lepidoptera and 400 scarab beetles.

Following Mr. Potts' talk Mr. Armitage introduced Mr. McKinstry who discussed the "Biology and systematics of water striders."

Evidence from the male genitalia (Singh-Pruthi, 1925) and from the mandibular levers (Ekblom, 1928) reveals that the water striders, Gerridae and Veliidae, and their allies, Hydrometridae, Hebridae, and Mesoveliidae, form a more homogeneous group than was formerly supposed (Reuter, 1910). An analysis of the family characters within the Amphibicorisae indicates that the traditional gaps between long established families are now bridged by such unique monotypic genera as *Hebrovelia* (Lundblad, 1939) and *Macrovelia* (Uhler, 1872). This last group was discussed in detail and was shown to be far removed both biologically and structurally from the family Veliidae, where it has remained for over 50 years.

In the discussion that followed Mr. J. O. Martin spoke of his early work on the Hydrometridae and Dr. Usinger contributed some observations on the pelagic *Halobates*. The meeting was then adjourned.—E. G. LINSLEY, Secretary.

One Hundred and Seventieth Meeting, November 15, 1941

Meeting held at 2:00 p.m. in the entomological laboratories of the California Academy of Sciences, San Francisco, California. President E. O. Essig in the chair. The following members were present: E. O. Essig, E. G. Linsley, G. E. Bohart, J. W. Johnson, E. G. Meyers, J. W. Tilden, K. Frick, A. E. Michelbacher, J. O. Martin, R. L. Usinger, R. W. L. Potts, J. F. Lamiman, E. S. Ross, K. S. Hagen, O. B. Cope, A. C. Smith, F. J. Driver, W. W. Sampson, W. Y. Chong, R. C. Miller, P. C. Ting, E. C. Van Dyke. Visitors were present as follows: K. D. Snyder, H. H. Morefield, T. Aarons, J. R. Walker, B. Hammerly, B. Prendergast, and M. Michener.

President Essig announced with regret the death of Mr. Ralph Hopping, one of the earliest members of our Society. He appointed Dr. Van Dyke and Dr. Blaisdell as a committee of two to prepare a biographical sketch of Mr. Hopping for publication in the Pan-Pacific Entomologist. It was also moved, seconded, and passed that

the Secretary write a letter to Mr. Hopping's family expressing sympathy for their loss.

The membership committee recommended Mr. Fred J. Driver and Mr. C. B. Eaton for membership. They were unanimously elected.

Professor Essig asked for a report from the committee on Entomological Nomenclature. Dr. Linsley reported that letters containing the resolution adopted by the Society at the last meeting had been sent to the secretaries of the Entomological Society of America and the American Association of Economic Entomologists. The former Society had replied that a similar proposal had been submitted by a group of eastern entomologists and that full consideration would be given at the December meetings in San Francisco.

Professor Essig announced that the next meeting would be the annual meeting and reports of all committees would be due. He appointed a nominating committee as follows: E. C. Van Dyke (chairman), O. B. Cope, C. D. Michener.

Dr. Van Dyke stated that many years ago he had come to the conclusion, solely on the basis of biological facts, that there was an area in the middle of Idaho which had not been glaciated. This view had been reached after a study of the ground beetles of the area. Recently Dr. Hanna returned from an expedition in this area and entirely confirms the conclusion on the basis of geological evidence.

Prof. Essig then presented Mr. G. E. Bohart who spoke on the California Academy of Sciences' recent expedition to Lower California with beautiful Kodachrome slides shown by Dr. E. S. Ross.

The trip was made in a one and one-half ton truck from San Francisco to Cape Lucas and return. The party comprised Dr. Ross and Mr. Bohart, who collected insects, Miss B. J. Hammerly, collecting plants for the California Academy of Sciences, Mrs. Berta Jongeneel, conchologist, and Mr. Morton Gleason. The start was made on September 19, 1941, and the group returned on November 4th.

Before showing the pictures, general aspects of any trip to Lower California were discussed, such as problems of drinking water, native foods, wild game, gasoline and road conditions. Drinking water was usually obtained from deep wells, and, in the Cape Region, from mountain streams. Twenty-five extra gallons of gasoline carried in five-gallon tins proved ample between certain towns and at least two good spare tires were necessary because of the very rocky and rutty roads.

Slides were shown in the sequence of a trip down the pennisula to the Cape. Emphasis was centered on the botanical features of the country as these were most conspicuous and best portrayed by the slides.

From San Ignacio south to the Cape, except on the Magdalena Plain, the vegetation had benefited by an abundance of late summer rain. The bushes and trees were green with leaves and often ablaze

with flowers of vines. The ground was covered with green grass and abundant flowers.

The major purpose of the expedition was to collect in the Sierra Laguna Mountains of the Cape Region. Leaving the truck in Todos Santos the party travelled by horse and mule to La Laguna, a mountain meadow 5,500 feet in elevation. The pictures shown of this area illustrated the floral similarity to certain parts of Alta California, though isolated by hundreds of miles of desert and ocean from similar growth. There was found here an association of pines, oaks, madrone and Toyon which provided very interesting and significant insect collecting.

About 20,000 specimens of insects, and 1500 plant sheets were collected, most of which will be added to the collections of the California Academy of Sciences.

After a period of questions by various members the meeting was adjourned.—E. G. LINSLEY, Secretary.

One Hundred and Seventy-first Meeting, December 6, 1941

Meeting held at 2:15 p.m. in the entomological laboratories of the California Academy of Sciences, San Francisco. President Essig in the chair. The following members were present: E. O. Essig, E. G. Linsley, R. L. Usinger, E. C. Van Dyke, G. E. Bohart, O. B. Cope, E. R. Leach, E. S. Ross, A. E. Michelbacher, J. F. Lamiman, D. DeLeon, A. C. Smith, E. A. Smith, H. P. Chandler, C. D. Michener, K. S. Hagen, F. J. Driver, G. F. Ferris, H. H. Keifer, R. W. L. Potts, R. C. Miller. Visitors were present as follows: Eric Walther, K. D. Snyder, C. T. Sierra, Jr., A. J. Walz.

The membership committee proposed Mr. Arthur J. Walz and Mr. R. A. Flock for membership. They were unanimously elected.

The secretary read a letter from E. N. Cory, secretary of the American Association of Economic Entomologists, in response to the nomenclatural petition of the Pacific Coast Entomological Society. Dr. Cory stated that the proposal had been referred to Dr. C. F. W. Muesebeck for his recommendation and that a further report should be forthcoming soon.

The nominating committee submitted the following names for officers of the Society during 1942: President, H. M. Armitage; Vice-president, H. H. Keifer; Secretary, E. G. Linsley; and Treasurer, E. R. Leach. There being no other nominations from the floor, a vote was called for and these officers were elected.

Professor Essig then yielded the chair to Mr. Keifer, who presided during the annual presidential address. Professor Essig's address was entitled "The Significance of Taxonomy in the General Field of Economic Entomology." The address proved thought-provoking and interesting and evoked a lively discussion, after which the meeting was adjourned.—E. G. LINSLEY, Secretary.